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Relationship of the Paper Industry to the NRA

W. W. Pickard, Formerly Deputy Administrator of the N.R.A. and Recently Made Paper Industries Coordinator Delivers An Inspiring Address at the Fall Convention, Which Met This Week in Chicago—Advises Paper Men Not to Waste the Great Opportunity Provided by the Codes and the National Recovery Act

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., September 26, 1934—Among the highlights of the fall convention of the National Paper Trade Association, beginning on Monday of this week, was an address on the "Relationship of the Paper Industry to the NRA" by W. W. Pickard, formerly Deputy Administrator of the NRA and now Paper Industries Coordinator. Mr. Pickard in his former capacity made a distinctly good impression on the numerous paper men with whom he came in contact and this speech will serve to increase that impression. He spoke as follows:

Mr. Pickard's Speech

The last time I appeared before you was in February of this year, only a very short time after your code had become effective. I was then the Deputy Administrator in charge of the Paper Codes. Now I bear the title of Paper Industries Coordinator. I know that you will agree that I do not look any differently than I did then and I can assure you that I do not think any differently and that my views in regard to industry problems are unchanged.

Furthermore as far as I can see there has been very little change in my functions. As Deputy Administrator it was my duty to make the National Industrial Recovery Act work in the Paper Industries. As Coordinator I have exactly the same duty. It is not my function now to try to get something for the paper industries from the NRA nor would this be a proper function for me to assume.

During my term as Deputy Administrator I had a unique experience; an experience no one has ever had before and one which in all probability no one will ever have again. During that time I have come in close contact with every phase and branch of the paper industry. I have come to know intimately the leading men in all of these branches. I have learned a little of the technical side of each branch but above all I have become familiar with the relationship between the various branches and with the problems which grow out of these complicated relationships. Incidentally when I use the word "Industry" I mean the whole process of manufacture and distribution beginning with the manufacture of pulp and ending with the sale of paper and paper products to retailers and consumers.

Because of this experience the industry has felt that I would be of value in bringing about adjustments and maintaining harmony between the various parts of this complicated piece of machinery. In that capacity I am a sort of a trouble shooter. That, however, is only part of the job. I have another and more important function. I conceive it to be my duty to develop industry thinking on broad general lines, such as the connection of the paper industry with industry generally; the economic problems of the day as they affect the industry and the alliance of the industry with the government as represented by the NRA.

Events and Changes of the Year

The subject which I shall discuss today is the relationship of the industry to the NRA and I shall endeavor to analyze the events of the past year and point out such changes as seem to have occurred with a view to a redetermination of that relationship.

The theory of the National Recovery Act was to attack the depression from the rear. Instead of waiting for better business conditions to produce more employment and higher wages the plan was to arbitrarily increase wages and employment and thereby to create the buying power which would improve business. Industry was requested to assume the burden of higher wages and shorter hours. At the same time provision was made for some relaxation of the anti-trust laws which would permit members of industries to cooperate in the intelligent management of their affairs.

This provision was variously interpreted both within and without the NRA. One view of it is very well stated in a sales letter sent out by a large company in the paper industry to its jobbers:

"The early announcements of the NRA plan led industry to believe that it was to be sort of a give-and-take proposition—a trade by which industry agreed to pay higher labor costs in return for the right to govern itself, maintain price levels which would provide the where-

(Continued on page 18)

Activities of Wisconsin Paper Manufacturers

Recently Formed Sterling Pulp & Paper Co. Retains Three of Dells Pulp & Paper Co. Officers —Will Continue to Make Fruit Wrapper Stock—John E. Alexander Elected President of Nekoosa-Edwards Paper Co.—Will Continue to Serve as General Manager

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., September 24, 1934—In setting up a new organization to operate the recently acquired Dells Pulp and Paper Company mill at Eau Claire, Wis., Sterling Industries, Inc., of Florida, retained three of the former plant officers. A new corporation was formed, to be known as the Sterling Pulp and Paper Company, and Eli Meyer of Tampa, Fla., was elected its president and treasurer.

Stephen R. Davis, who held the presidency of the Dells company, was elected vice president. The other officers are: C. J. Hendricks, Chicago, vice president and sales manager; Eugene O'Brien, Eau Claire, vice-president and general superintendent; E. L. Holden, secretary. Mr. O'Brien and Mr. Holden were members of the Dells staff.

Mr. Hendricks expects to move from Chicago to Eau Claire shortly to take up his new duties. Mr. Meyer will retain his residence at Tampa.

For the present at least, the company will continue to manufacture the same grades of paper as before, largely fruit wrapper stock. Within two months, production will be stepped up to approximate capacity.

In the reorganization of the Nekoosa-Edwards Paper Company due to the recent death of Lewis Miller Alexander, founder and president, the board of directors, at a meeting last week, elected his son, John E. Alexander, as president. He previously had served as vice president, and will continue in his capacity as general manager.

The first vice presidency was filled by the election of Joseph A. Auchter, of Milwaukee, to that office, and he also becomes treasurer. He was also elected a director, as was Felix Pagenstecher, who has been acting as vice president in charge of sales. C. A. Jasperson continues as secretary.

Mr. Auchter is well known in industrial circles, having gained a broad experience in financing of numerous industries, including a great many paper mills in Wisconsin, through his connection with financial institutions in Milwaukee. He is forty years of age, and has been vice president and treasurer of the Securities Company of Milwaukee, Inc. For the past twenty-four years he has been serving that company and its predecessor institutions, the First Wisconsin Company and the First Wisconsin National Bank, of Milwaukee.

In resigning his Milwaukee position, Mr. Auchter plans to move to Port Edwards, Wis., and devote his entire time to the affairs of the Nekoosa-Edwards Paper Company. He has severed all of his Milwaukee connections. He will take up his new duties October 1, and expects to build a new home at Port Edwards.

Officials of the company have expressed the feeling that the organization has been considerably strengthened by the selection of these officials, in view of their experience and qualifications.

Paper Chemistry Institute Elects

E. A. Charlton, vice president of the International Paper Company, New York, has been elected a trustee of the Lawrence Institute of Paper Chemistry, Appleton, Wis., for the term expiring in 1935. He fills the vacancy causd by the death of Lewis M. Alexander, president of the Nekoosa-Edwards Paper Company, Port Edwards, Wis., who was one of the founders of the Institute. The International Paper Company became a member last March.

Mr. Carlton was elected at the fifth annual meeting of the members of the Institute at Appleton on September 14. No changes were made in the officers, or among the remaining members of the board of trustees.

Officers re-elected are: Ernest Mahler (vice president of Kimberly-Clark Corporation, Neenah, Wis.), president; D. C. Everest (vice president of Marathon Paper Mills Company, Rothschild, Wis.), vice president; Dr. H. M. Wriston (president of Lawrence College), secretary; Westbrook Steele, executive secretary; R. J. Watts, treasurer. Other trustees are: Monroe A. Wertheimer, Kaukauna, Wis.; Dan K. Brown, Neenah, Wis.; Robert B. Wolf, Longview, Wash.; H. C. Carruth, Chillicothe, Ohio, and Hugh Strange, Neenah, Wis.

Two additional services have been inaugurated by the Institute. One of these is a quarterly research bulletin sent to all members, constituting brief reports on research problems in progress not financed by an allied industry, or not a confidential problem of member mills. The second is a series of technical conferences under leadership of some member of the staff. The first of these was held in July. The next will be held the third week in November. These are open only to representatives of member mills.

Dr. Wriston's Annual Report

These comments from the annual report of Dr. Wriston are of interest:

"It was a satisfactory year financially. The members met their obligations for the most part promptly, and a number of industrial projects of a research character were undertaken. Five new members have been added since my last annual report—the Castanea Paper Company, the Oxford Paper Company, the International Paper Company, the Hammermill Paper Company, and the Michigan Carton Company. We were able during the year greatly to improve our accounting system and to establish a depreciation fund to take care of obsolete equipment. For the next two or three years we should put into that fund substantial amounts in order to be assured that obsolescence of equipment does not prove a handicap to our work.

"The participation in the work of the grading committees, acting as technical reporter to them, involved reconstruction of our office arrangements, large additions to the staff, and the utilization of a considerable amount of our most unusual and delicate equipment, the maintenance, cost, and depreciation of which are very heavy. The work in connection with the code, however, was spasmodic in character so that it was necessary to carry a heavier payroll than the total volume of the work evenly distributed would have required. Despite these difficulties, the work in connection with the codes has not been a financial drain upon the Institute. At the same time, when all of the costs are taken into consideration, it can fairly and profitably be said that it has not more than paid for the time, materials, space, and equipment.

"It is the aim and purpose of the Institute to serve the member mills. However, some of them have been chary

of bringing us problems for which a charge is made in addition to the membership. In order to encourage the mills to bring problems to the Institute, the trustees have provided that an amount not to exceed fifty per cent of the membership payment may be drawn upon by the member mill for staff time in connection with the member on specific projects. The rent of space and utilization of equipment and material will still be charged for, but staff time to the extent of fifty per cent of the amount of membership contract will be available. It is the earnest hope of the trustees that this will induce an even closer co-operation between the staff of the Institute and the supporting membership. It is difficult to conceive the change which has taken place in the staff of the Institute. There are now forty-five members of the staff of whom thirty-six are on full time and nine on part time."

News of the Industry

Badger Paper Mills, Inc., of Peshtigo, Wis., has filed complaint with the Interstate Commerce Commission against freight rates on printing and wrapping paper and other products shipped from its mill into eastern territory. The company declares the rates are eight and nine cents per 100 pounds higher than the arbitraries above the first class rates under the eastern class rates decision. An adjustment is requested.

Demand for coal shipments to mills of the Fox River Valley has been greater than for the same period a year ago, according to Ben G. Prush, manager of the Fox River Navigation Company. The company operates a co-operative barge line carrying coal from the docks at Green Bay, Wis., to various mills on the Fox River. Several hundred thousand tons of coal are handled annually. Shipments will continue until November 17, when navigation closes for the winter. The equipment will then be placed in dry dock for overhauling during the winter, with a crew of twenty men thus employed.

Employees of the Badger-Globe mill of the Kimberly-Clark Corporation, Neenah, Wis., have organized a credit union under the Wisconsin banking department. Shares will be sold to employees and savings will be accepted for deposit. Small loans are made to members out of the funds. Claude Brady is president; Margaret Fahrenkrug; vice president; Robert Sanders, treasurer, and Ruth Sullivan, secretary.

Appleton Engraving Company, which produces most of the carton and label plates for paper mills of the Fox River Valley, will move its plant about December 1 from Appleton, Wis. to Neenah, Wis. The company has leased an entire floor of the Jersild Knitting Company Building.

The seventh raft of pulpwood has been towed across Lake Superior by the tug Butterfield, of the Consolidated Water Power and Paper Company, and its program for the season is now completed. This raft was brought from Peninsula Bay, Canada, to the Munising Paper Company, Munising, Mich. Although the raft had to go through 160 miles of open water during a hazardous season, the trip was completed without mishap. The other six rafts were delivered to Ashland, Wis., five for the Consolidated company, and one for Superior Spruce, Inc. This is the largest movement of pulpwood of any season by this method.

Adam C. Remley, manager of the Patten Paper Company, Ltd., Appleton, Wis., has been appointed to his tenth term as a member of the municipal water commission of the city of Appleton. He first took office when the commission was organized in 1917.

Wilbur Whitrock, beater engineer for the Fox River Paper Company, Appleton, Wis., was presented with a gold medal last week for his heroism in rescuing a 4-year-old boy from the icy waters of the mill canal early last spring. He saw the boy floating in the water and disregarded his own life in saving him and applying resuscitation despite his wet clothing and chilled condition. Mill officials, superintendents, foremen and the safety council were present at a surprise meeting when the medal was presented by Fred W. Braun, of the Employers Mutual Liability Company.

Netherlands Considering Quota on Paper Imports

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 26, 1934—The Netherlands Government is reported locally to be giving serious attention to a plan to place quotas on the imports from foreign sources of all kinds of paper excepting newsprint and coated art paper, according to a report from Vice Consul W. M. Chase, Amsterdam, made public by the Department of Commerce.

Trade opinion in the Netherlands is that the plan will be made effective in the near future because of the prevailing conditions in the industry, the report stated.

Conditions in the paper industry of The Netherlands at the present time are reported to be distinctly bad. Plants producing wrapping paper are operating only two or three days each week and are said to be producing at a loss. Manufacturers of fine grades of writing papers are producing at approximately 50 per cent of capacity with little or no profit.

According to statistics contained in the Vice Consul's report, 124 tons of fine book and writing paper were imported into The Netherlands from the United States during the seven months of the current year compared with 102 tons during the corresponding seven-month period of 1933.

Atlantic Paper Co. Opens at Savannah

SAVANNAH, Ga., September 24, 1934—The Atlantic Paper Company, branch of the Jacksonville Paper Company, has opened at West Broad and River streets, in the building formerly known as the Western Electric building. William E. Penney is general manager.

The firm will handle fine paper for printing purposes, wrapping paper, paper bags, woodenware, school supplies and the general course paper line. The quarters occupy 26,000 square feet of floor space. The company is one of twelve branches in the Southeast. Messrs. Penney and Smallwood have already moved their families to Savannah.

Union Bag Gets Pulp Through Albany

[FROM OUR REGULAR CORRESPONDENT]

HUDSON FALLS, N. Y., September 24, 1934—A shipment of 2,200 tons of Swedish pulp was made this week from the port at Albany to the mills of the Union Bag and Paper Corporation here. The barge canal route is being used inasmuch as the concern has found it more economical to use this means of transportation in preference to motor trucks. It is understood, however, that the fleet of motor trucks maintained by the company will be used in hauling future pulp shipments from the Fort Edward terminal and also for other purposes. A large cargo consisting of several thousand tons of Canadian pulp was also received at Albany this week and shipment to mills in this section will be made soon.

Demand for Fine Paper Improves In Boston

Volume of Orders for Various Standard Grades Fairly Sizable—Kraft Wrapping Paper Market Somewhat Spotty—Paper Board Manufacturers More Active Than of Late—Paper Stock Section Generally Quiet—Waste Paper Quotations Irregular

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., September 24, 1934—With many New England textile mills which have been closed on account of the strike reopening today, a resumption of business in wrapping paper, some paper specialties and twine is expected, unless a settlement of the labor troubles is not consummated. Dealers in these commodities have been considerably affected by the shutting down of the mills. Outside of the greatly lessened demand from this source, kraft was somewhat spotty during the week under review, "not any too good," "just 'so-so!'" Fine papers continued to improve in demand, with some fairly sizable orders here and there. There was a slight improvement in box boards, with some of the box manufacturers doing better than they were.

Paper stock, as a whole, was rather quiet. Some road salesmen report no business. Code prices on mixed papers and old newspapers do not seem to bring the results expected. "Consuming mills are slow to come forward and pay the Code prices," says a dealer. "It does not look as if the 90-day law set up by the NRA would work. There is another law, called the law of supply and demand that seems to be working better. There is an ample supply and a small demand." A limited quantity of corrugated boxes, some of which, at least, were distress lots, sold at .32½ @ .40, a reduction from .40 @ .42½. Many dealers, however, would not sell at these figures, asked because there was a desire to realize on merchandise on hand. Prices of bagging, new and old domestic rags and foreign rags remained unchanged.

Twine is reported as soft as it has been in years, and it is believed that this commodity has not hit bottom yet. This condition applies largely to all kinds of twine.

Cummings to Devote Time to Association

Frank B. Cummings, executive secretary and treasurer of the Code Authority in New England, Central and Northern New York Regional Committee—Region No. 1—is to devote his entire attention to the New England Paper Merchants Association.

At a meeting of that association at the Chamber of Commerce Thursday evening, at which 26 were present, with President F. Bendel Tracy presiding. Chairman C. A. Esty, as chairman of the Code Authority in Region No. 1, read the following announcement, which is being released to all the paper distributing trade in this region:

"At a meeting of Regional Committee No. 1 of the Paper Distributing Trade held at 49 Federal street, Boston, on Monday, September 17, 1934, it was voted to release Frank B. Cummings as executive secretary and treasurer of Region No. 1 on October 1 to enable him to give his full time and attention to matters of great importance in the New England Paper Merchants Association.

"Mr. Cummings' work has been most acceptable and satisfactory to members of the paper distributing trade in the New England and Empire State trading areas of Region No. 1 during these early months of Code administration, and were the mechanics of operation not now well established under a competent staff at 49 Federal street, and were Mr. Cummings' experience and personality to be lost to members of the trade, his resignation could not have been accepted. It is felt, however, that the effectiveness of Code operation will be largely increased and supplemented throughout Region No. 1 by permitting Mr. Cummings to pursue the activities which he has so definitely in mind.

"Subject to the approval of the Code Authority, E. J. Norris will assume the duties of executive secretary and A. R. Barnes those of treasurer of Region No. 1 on October 1, 1934.

"I feel sure that these men in their new positions will be accorded the helpful cooperation of every member of the paper distributing trade in Region No. 1."

News of the Trade

Tileton & Hollingsworth Company, local manufacturers, are offering Collectors' Novel, a superior bulking book paper, designed for use in books for collectors. This paper is evensided, made in a natural mellow color that is pleasing to the eye. For this reason type printed on Collectors' Novel is particularly easy to read. The paper may be favorably used for commercial as well as de luxe editions, as it is moderately priced. It is made in three standard sizes and four weights and has the accepted standard bulk for this type of book paper.

Ernest S. Reid, Chamber of Commerce Building, has been appointed New England representative of the Crystal Paper Service Corporation of Los Angeles, Cal., manufacturer of drinking cups, soufflé cups and paper containers. Manufacturing and selling on the West Coast for several years, this concern is now offering its products for national distribution. Mr. Reid is one of the men who have been the longest in the drinking cup business.

F. Bendel Tracy, president, and John E. Roach, vice-president of the Fort Hill Paper Company, left Saturday for Chicago, where they will attend the meeting of the National Paper Trade Association.

John E. Brooks, head of the Brooks Manufacturing Company, has returned to his office after a mastoid operation, performed at the Faulkner Hospital a few weeks ago.

Benjamin C. Spaulding, secretary of Baird & Bartlett Company, is expected to return tomorrow after a vacation passed on a motor trip through Maine, his native state, on which he was accompanied by Mrs. Spaulding.

William J. McLellan, purchasing agent for Carter, Rice & Co., Corp., has returned from a vacation at Rockport, Mass.

To Register A.P.W. Bonds on N. Y. Exchange

The New York Stock Exchange has received an application for a temporary registration from the Albany Perforated Wrapping Paper Company for its first mortgage and collateral trust twenty-year sinking fund 6 per cent bonds of 1948. This application has been forwarded to the Securities and Exchange Commission in Washington, and will make possible continuation of trading in the issue after October 1, when the registration section of the Stock Exchange Control Act becomes effective.

York Paper Mills, Ltd., Chartered In Ontario

Section of Plant of Dominion Paper Box Co. Leased to New Organization—Will Manufacture Toilet Paper, Napkin Tissues, Colored Fourdrinier Specialties and Other Light Weight Papers—W. A. Crawford Elected President and General Manager

TORONTO, Ont., September 24, 1934—It was announced this week from the plant of the Dominion Paper Box Company, Ltd., Toronto, that a section of the plant had been leased to the York Paper Mills, Ltd., a recent incorporation, which is about to commence the manufacture of toilet paper, specialty napkin tissues, colored Fourdrinier specialties and light weight papers generally. The new company, which has no connection with the Dominion Paper Box Company, is headed by W. A. Crawford, who is president and general manager, with V. M. Crawford, secretary-treasurer, and Harold Levi and H. A. Lawrence, directors. Four other directors are to be appointed later.

W. A. Crawford, the president, is also plant manager and director of the Dominion Paper Box Company. He has a wide knowledge of paper manufacture, having been vice-president and production manager of the Sutherland Paper Company, Kalamazoo, Mich., before coming to Toronto two years ago to assume an executive position with the Dominion Paper Box Company.

In conversation with the PAPER TRADE JOURNAL Mr. Crawford said that the domestic market for light weight papers had been closely studied and that his lines for the most part would not come into direct competition with similar plants in Ontario. It was not anticipated that an export market would be developed by the company.

The equipment now being installed includes one small cylinder tissue machine of 72 inch trim, a second tissue machine and one combination Fourdrinier cylinder machine for the manufacture of specialties. The company has made arrangements to buy its steam for power and processing work from the Dominion Paper Box Company and it is expected that the new organization will be in production inside of two months from now.

Quebec Premier Criticised

Premier L. A. Taschereau of Quebec came in for severe criticism during the session in Toronto of the Trades and Labor Congress, following the presentation of a resolution protesting against his assertions that American agitators were responsible for the Lake St. John papermakers' strike and his public attitude towards trades unions. Arthur Daoust Hull, who led the attack, declared that he had directed the strike, and charged that while in the district his assistant, Ernest B. Lambton, had been kidnaped and a similar attempt made against himself by five men employed by the paper companies affected. The delegate went on to charge that he has evidence to show that those men had been paid $100 each by a paper company. They had been convicted and fined $10 and costs of $3.75 for their assault on him and would appear for trial before the General Session in October on the alleged kidnaping of Mr. Lambton, he said. Premier Taschereau's Government was so jealous of its Provincial rights that it would not allow the Dominion Government to do anything to alleviate the situation. The strike, involving 81 men, had lasted for three months, he said, and declared that the Department of Labor would be better named the Department of Manufacturers. On his tour of investigation the Quebec Premier had got no closer to the scene than fifty miles distant, he said, and then had talked only to a member of Parliament and officials of Price Bros. & Co.

Pulpwood Strike in Northern Ontario

Pulp cutters employed at camps in the Iroquois Falls district of Northern Ontario, which are supplying pulp to the Abitibi Power and Paper Company, poured into Iroquois Falls as the strike spread to comprise three of the six camps in the section. In the neighborhood of 100 men had arrived in the town and as the agitation for a higher wage scale spread to two other camps approximately 225 men more came in later. B. Rogers, member of the executive of the Lumber Workers' Union, made the prediction that by the first of the present week the strike would spread to all camps in the section and to others in the Cochrane area. Union officials predicted that close to 1,000 would have walked out by then, he said. The number already to desert the three camps, totalling over 300 men, represents about fifty per cent of the number in the six camps in this section, said Rogers. Though officials of the Abitibi Power and Paper Company declined to discuss the walkout, it was rumored that no effort would be made to replace the strikers, but that the camps deserted would be closed down for the season. No violence has been reported, but a minority of the workers who remained in the camps already affected were said to have been threatened by agitators.

Heavy Rains Raise Connecticut Waters

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., September 25, 1934—Heavy rains in the Connecticut Valley and up through to the headquarters of the Connecticut River have raised the waters to three and one half feet over the crest of the dam and assured of plenty of water for some days. In one storm nearly four inches of water fell in this locality. Local mills are having diverse experience in the demand for paper, the Parsons Paper Company having run more than the usual the middle of the month. The Whiting Paper Company is doing a steady business though not fully up to normal.

Talk of a sympathetic strike on the part of the employes of the paper mills was not viewed seriously here and the ending of the textile strike will end that talk definitely.

Harding-Jones Charged with Stream Pollution

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, September 24, 1934—The Harding-Jones Paper Company of Excello was made defendant the past week in a suit for $10,000 damages filed by I. S. Sparks, a resident of Lemon township, Butler county. The action was instituted in the Common Pleas court of that county in which the mills are located.

The claim for damages arises from the alleged pollution of a stream which runs through the plaintiff's farm, the petition avering that great injury has been caused to be inflicted upon the petitioner because of noxious chemicals from the Excello mills.

Chicago Paper Market Conditions Irregular

Although Inquiries for Future Account Are Frequent, Actual Orders for Various Standard Grades of Paper Are Scarce—Demand for Book and Cover Papers Improves Slightly—Bond and Ledger Papers Fluctuate—Kraft Papers Rather Quiet

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., September 21, 1934—Chicago jobbers and mill representatives are expecting a good many friends and customers next week as the National Paper Trade Astion meetings get under way. Small group meetings in preparation for the Fall Meeting have aided in beginning the trek to the Chicago market. Marketwise, little or no change is reported as the Fall upturn gives obvious signs of being somewhat belated. General business conditions which have been of the halting variety have helped to create a somewhat listless situation.

The majority of the specific markets are reported as "spotty" to the extent that some lines are up and others down. This has been extended into daily reports when business is noted as improving on one working day and being sharply curtailed on the following day. The number of inquiries is reported as increasing but these have not been transferred into actual orders to any marked extent. Book and cover papers were slightly bettered durin the week, while bonds and ledgers indicated a daily fluctuation which averaged only slightly above a week ago. Kraft papers were not in a heavy demand, though depleted stocks reported indicated a brisk upturn when the buying does get under way. Ground woods were uncertain as to the outlook though more actual inquiries were noted. The newsprint situation continues to react unfavorably to both markets, say representatives here. Paper board was virtually unchanged. Waste papers were dull with only one or two fairly bright spots in the entire list.

Paper Merchants Fall Convention

The stage is all set for the Fall meeting of the National Paper Trade Association which gets under way in Chicago next Monday, September 24. The Hotel Stevens will be headquarters for all events with the exception of the annual outing sponsored by the Middle West Division of the Salemen's Association of the Paper Industry, to be held at the Flossmoor Country Club. Not until Wednesday will the Fine and Wrapping Paper divisions hold their divisional sessions, the general and committee sessions and discussions of code procedure holding the stage the early part of the week. Committee and group meetings get under way immediately upon the opening of convention proceedings September 24. A. W. Leslie, chairman of the Code Authority, will preside at the opening sessions when F. H. Crockard, deputy administrator in charge of the wholesale section of the code, is to speak. This session sponsored by the Code Authority, is to be further supplemented by a report on Code Procedure, a review and an open forum discussion.

Tuesday afternoon Mr. Leslie will open the regular association sessions as president of the National Paper Trade Association and W. W. Pickard, coordinator of the paper industry, is also scheduled to speak. Reports of various officers will be given at this time. A dinner of presidents and secretaries of local associations is slated for Tuesday evining, September 25th. With H. L. Zellerbach, vice president, presiding, the Wrapping Paper Division meetings get under way on Wednesday with committee reports and discussions of trade customs and practices. The Fine Paper Division, with O. F. Marquardt, vice president, presiding, will hold meetings at the same time and discuss problems related to that division and listen to committee reports.

Paper Mill Superintendents Meet

Exceptionally encouraging attendance characterized the Fall Meeting of the Northwest Division of the Superintendents Association held at Wausau, Wis., September 21 and 22. Under the direction of Grover Keeth, the program was varied and interesting and attracted the attendance of a number from Chicago. Three sessions were held on subjects of interest to the superintendents. Ray Page, Jones Associated Engineers, was chairman of a special session given over to a discussion of finishing room problems as related to the salesmen. On the morning of September 22 L. F. Jahnke, of the Vacuum Oil Company, spoke on the use of lubricants, while representatives of the Farrell Birmingham Company and the Minneapolis-Honeywell Company spoke on Calender rolls and Electric Pressure Control respectively. Golf and bridge were provided as entertainment features for the many guests..

Hobart Paper Co.'s Golf Outing

Mill friends of the Hobart Paper Company and executives of that organization took part in the annual golf outing sponsored by the Chicago concern at the Rolling Green Country Club, September 19. The invitations were limited to mill friends only, who reported a regular and most enjoyable time at this 1934 edition of the Hobart golf events. Luncheon, dinner and golf were enjoyed by those present. Prize winners included the following, all of whom received their awards at the dinner session whenever the singers led by Jim Coy, Ray Russell and Frank Prentiss, permitted the chairman of the evening to get a word in edgewise. Low net, J. M. Ward, Detroit Sulphite Pulp and Paper Company; second low net, P. C. Wesco, Fox River Paper Company; low gross, Cary Langford, Waldorf Paper Company; blind bogey, Frank Prentiss, Hollingsworth & Whitney; second blind bogey, Lou Ferris, Patten Paper Company; least number putts, Harry Johnson, Mohawk Paper Company; special prizes won by John Penny, Groveton Paper Company; Ed Cowhill, Hawthorne Paper Company, and A. J. Nestor, Groveton Paper Company.

News of the Trade

Fred A. Roll, formerly with the Wrenn Paper Company, is now associated with the Allied Paper Mills and located in the Chicago offices of that company at 400 West Madison street. Mr. Roll's former experience with Wrenn, in the merchandising of paper lines prior to that connection, is expected to be of real benefit to the book paper customers of the Allied organization.

The American Envelope Company, West Carrollton, Ohio, has leased 20,000 square feet of space in the L. & H. Building, 2626 West Washington Boulevard, for a branch factory in Chicago. The branch will be under the direct management of James F. Lee, until recently associated with the Chicago Paper Company.

Government of Quebec Exchanges Timber Lands

Transfers Limits on North Shore of St. Lawrence to Brompton Pulp & Paper Co. In Exchange for Lands on South Shore—Basis of Exchange Is Two-for-One In Favor of Company—Forest Fire Prevention Work Considered Satisfactory

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., September 24, 1934—Pulp and paper companies in the province of Quebec are greatly interested in a plan whereby the Provincial Government is exchanging timber lands on the North Shore of the St. Lawrence for limits held by the companies in settled areas, particularly on the South Shore. The situation is that various old rural parishes are unable to extend themselves because they are bounded by forestry limits being exploited by private companies. To remedy this situation legislative authority has been given for the Government to make exchanges of timber lands with private companies. The first of these transactions have been carried out during the past week when the Quebec Government took over approximately 200,000 acres of land in l'Islet Montmagny, Bellechasse, Megantic, Compton, Lotbiniere and Wolfe counties from the Brompton Pulp and Paper Company and the McCrea, Wilson Company, in exchange for properties situated in the Charlevoix-Saguenay district. This means that some 2,200 farms are now available for cultivation by colonists of the future.

The Government's exchange of land with the Brompton Pulp and Paper Company and the McCrea Company this week was made on a two-for-one basis in favor of the companies. In other words, for every acre that the company gave the Department of Lands of Forests, it received two acres of new timber land on the north shore of the St. Lawrence River in exchange. This was because the Government took into consideration the fact that in abandoning their south shore operations, and in undertaking new activities within virgin forestry areas in the north, the companies would incur heavy additional operating expenses, including higher exploitation costs, greater transportation rates, higher labor costs, etc.

"The companies are satisfied, and so is the Department of Lands and Forests," it was stated. "And once the $10,000,000 for colonization which the Government proposes is voted, colonization will be undertaken in Quebec on a scale greater than ever before."

Many Forest Fires, But Damage Slight

According to a report of the Quebec Government, 711 forest fires occurred within timber areas of the province during the past six months, sweeping over territory of approximately 161,573 acres, but alert surveillance and prevention work carried on by some 4,169 forestry inspectors, fire rangers and assistants, served to check devastation of thousands of feet of valuable timber, however, it being estimated that only 25,121 acres of land covered by marketable timber, or 15 per cent, of the total area swept by the flames, were burnt.

Newsprint Market in Irish Free State

According to figures supplied by James Cormack, Canadian Trade Commission in Dublin, Canada is the largest supplier of news-print in reels to the Irish Free State, the imports from Canada being 146,437 cwt. in 1933, as compared with 113,373 cwt. in 1932. Finland came next in 1933 with 100,225 cwt. Mr. Cormack adds:

"The limited extent of the available market, the keen competition amongst the various papers for the relatively small business and the effects of the present strike on financial reserves all have a tendency to make price the important selling factor for the next few months. Standard reels of standard quality are said to have been bought recently for as low as £7 10s. per ton c.i.f. Dublin, but a normal price during the earlier part of the year was about £8. Most of the quotations for Ireland are, however, for free delivery into the paper warehouse, which represents roughly an addition of 15s. to the price.

"Canada's share of the newsprint business in the Irish Free State is divided at present between two mills, one of which employs a local agent and the other a visiting agent from the London house supplying the United Kingdom market. It is considered that any other Canadian mills wishing to compete here, should have local agents unless already committed to their United Kingdom representatives as regards this territory."

Overissue Newspapers in Netherlands India

An extensive market for overissue newspapers exists in Netherlands India, where they are used for wrapping purposes in the countless retail stores catering to the native and Chinese trade, writes R. P. Bower, assistant trade commissioner for Canada in Batavia. Quantities imported have remained fairly constant, although the value has declined steadily since 1930. In that year imports amounted to 24,819 tons valued at $1,131,780. By 1931 the quantity had increased to 31,475 tons, but the value had dropped to $931,300. Figures for 1933 were 27,567 tons and $807,495 respectively, while those for the first quarter of 1934, 7,515 tons and $245,406, indicate an improvement for the current year. The United States has long been the chief source of supply with 20,177 tons or 81 per cent of the total in 1930, 24,719 or 77 per cent in 1931, and 5,434 tons or 72 per cent for the first quarter of the present year. The only other supplier of any importance is the United Kingdom, which shipped 3,400 tons in 1930, 5,401 tons in 1931, 6,845 tons in 1933, and 1,406 tons in the first quarter of this year. Japan, China, and Belgium have also contributed at various times.

Modern Mimeopraph Paper

The Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis., has been sending out an advertising folder setting forth the advantages of Modern Mimeograph paper. This is an unusually attractive piece of advertising matter of a paper product which ordinarily does not get very much publicity. The company has also been sending out a four-page folder advertising its Modern Form paper that was circulated in the Chicago territory over the signatures of the J. W. Butler Paper Company and Bermingham & Prosser. This same circular was issued over the names of its merchants selling this product in Newark, Philadelphia, Baltimore, Washington, Cincinnati, Columbus, Detroit, Grand Rapids, Indianapolis, Milwaukee, Kansas City, Omaha, Denver, Los Angeles, San Francisco, and other places. This particular circular signed and sponsored in this way by paper merchants locally in these various sections has attracted a good deal of attention and proven to be very effective as a builder of business for this product.

PhiladelphiaPaperMarketDisplaysFirmerTrend

Volume of Sales of Various Grades of Paper Increases Generally—Livelier Demand Experienced for Coarse Wrapping Paper, Following End of Textile Strike—Accumulations In Warehouse Not Excessive, While Quotations Remain Unchanged

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., September 24, 1934.—While there is a near unanimity in trade circles in their widest extent —fine paper, coarse paper and all allied lines—that this past week has shown a firmer tone, the setback encountered during the summer months is not entirely abated. To sum it up, there is a general all-around increase in sales. And, with the strike in the textile industry called off, a decided pick-up is expected in the consumption of coarse papers, which in Philadelphia, in normal times, is of considerable magnitude. One of the leading merchants in the coarse paper trade said that conditions in a general way were much healthier than they have been for months, although far from normal, no one is overstocked, and prices remain unchanged. It is reported that there has been a little weakening—about 5 per cent—in the price of toilet tissues. And jobbers' twine, known in the trade as Sisal twine, has sustained a sharp cut. The paper stock trade continue somnolent. However, there is a general feeling that this branch of the business is due for some really good business in the very near future.

Association Activities

At the first Fall meeting of The Paper and Cordage Association, Inc., held during the week at the Adelphia Hotel, William Carroll, the guest speaker, held those in attendance spellbound until the close of his address—"My Conception of Personal Service," dwelling throughout on the spirit of cooperation. All those privileged to hear Mr. Carroll—including Executive Secretary of the Philadelphia Paper Trade Association N. W. Walker—were unanimous in their opinion that Mr. Carroll had imparted to them exalted ideas of an inspirational character and left with them the feelng of treading ethereal spaces. Presentation of a gold medal, as announced in these columns last week, was made to E. L. Richards, sales agent for the Buffalo Envelope Company, and a very delightful musical program was rendered by Raymond F. Armstrong, of F. W. Hoffman & Co., Inc., assisted by C. F. Koenig, who led in the singing. The following firms were entered into membership: Dill & Collins, represented by W. R. Ingersoll; Joseph Parker & Sons, represented by L. H. McGreen; Charles Beck & Co., represented by Leon Beck; Shellmar Products Company, represented by J. Harvey Rex; and Hampshire Paper Company, South Hadley Falls, Mass., represented by Constant Southworth, president. This association is working for a goal of seventy-five members, and President George K. Hooper says that upon attainment of this all efforts of the association will be concentrated on the membership in its entirety, sidetracking for the time being efforts to obtain any new members.

Executive Secretary Howard Beckett, of the National Paper Box Manufacturers Association, attended the annual meeting held in Washington during the week of the American Trade Association Executives. The meeting of the National Paper Box Manufacturers Association, with headquarters in the Liberty Title and Trust Building, which was scheduled for September 18, has been postponed until early in October, due to the reorganization of the NRA.

Robert A. Considine, representing the Fine Paper Division; and W. H. Kilhour, Jr., accompanied by Nathaniel Saxe, representing the Coarse Paper Division, left this city on Saturday last to attend the National Association Convention in Chicago.

News of the Trade

Morgan H. Thomas, president of Garrett-Buchanan Paper Company, plans to participate in the session of the Senior Golf Association to be held this week at Pocono Manor, Pa.

Constant Southworth, president of the Hampshire Paper Company, South Hadley Falls, Mass., visited the trade here during the week.

Representative H. O. Charles, of the E-Z-Opening Bag Company, of Tuscaloosa, Ala., made the rounds of the trade this week.

The many friends of Charles W. Mather, widely known paper merchant, with offices at 611 South Front street, will be sorry to learn that he is confined to the Jefferson Hospital. Mr. Mathers is a member of the Trading Area Sub Committee.

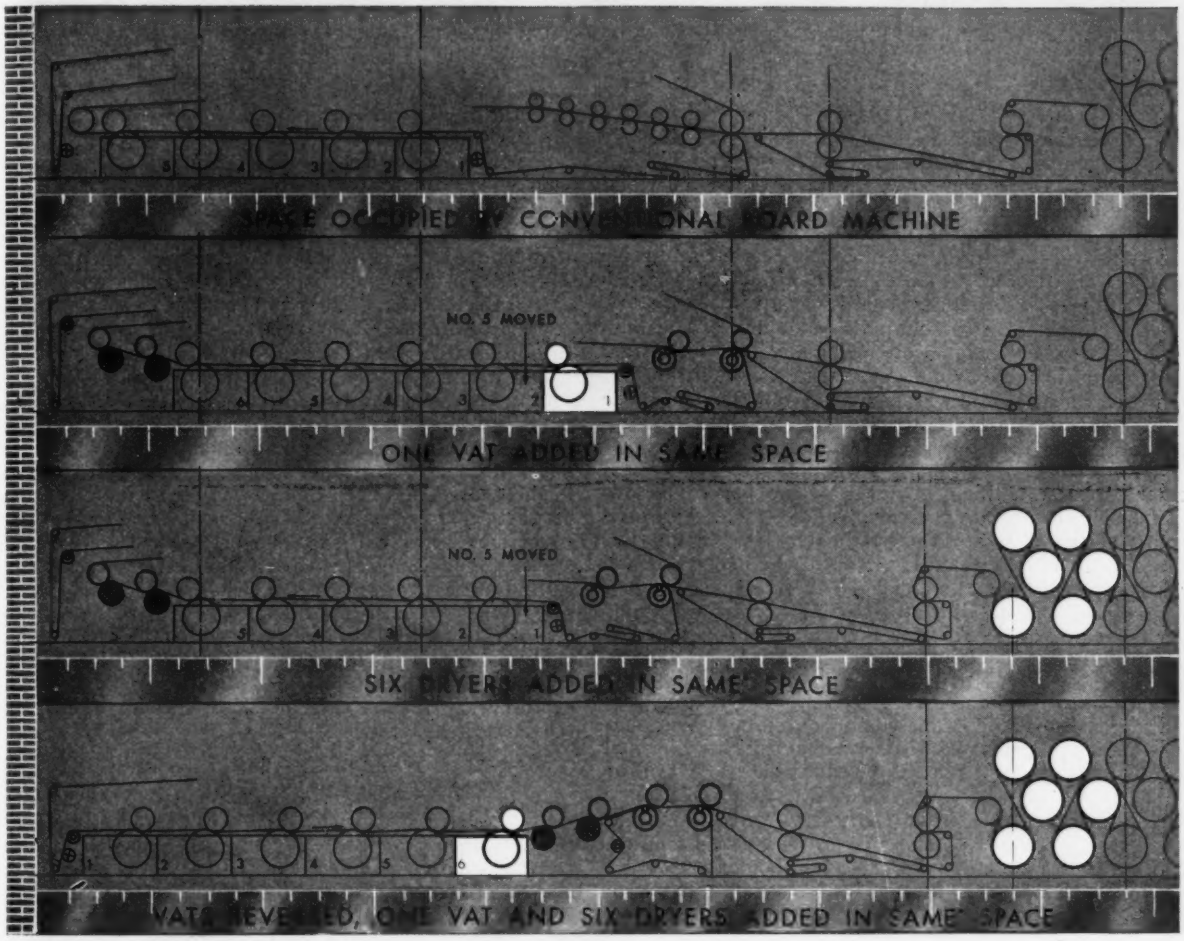
Reflective and Transmissive Properties of Diffusing Media

Many problems in the textile, paper, paint, ceramic, and other industries call for optical methods in the evaluation of various properties of raw materials, intermediate, and finished products. Among such properties are the color, gloss, and surface texture of fabrics, papers, and painted or enameled surfaces, the covering and tinting powers of paints and ceramic bodies, the transparency or optical density of printing papers, tracing papers, or photographic films, and the general diffusive properties of illuminating glassware and various reflecting surfaces.

The underlying physical nature of these properties has been analyzed, and in RP704 in the August number of the National Bureau of Standards' Journal of Research it is shown that all may be described as varied manifestations of the optical phenomena of absorption and diffusion. To obtain fundamental data which may serve as a rational basis for the development of suitable methods and instruments for the special purposes indicated above, equipment has been designed and constructed with which a complete determination of the diffusive and absorptive properties of various materials may be made. With this equipment the light incident on the surface of a sample is precisely controlled in respect to its distribution among different directions of incidence and various wave lengths, and measurements are made of the corresponding distributions of light as diffused in all directions out from the sample.

The equipment includes two separate illumination units, one for completely diffused illumination of the sample and the other for unidirectional illumination at any desired angle of incidence. Light reflected or transmitted by the sample in any given direction from the surface is measured by application of ordinary visual photometric or spectrophotometric methods. Applications of the equipment to specific problems are not included in the scope of the present paper.

DOWNINGTOWN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NO. 5 MOVED
ONE VAT ADDED IN SAME SPACE
NO. 5 MOVED
SIX DRYERS ADDED IN SAME SPACE
VATS REVERSED, ONE VAT AND SIX DRYERS ADDED IN SAME SPACE

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No Board Machine is Modern *Without* DUO-DEHYDRATION

RELATIONSHIP OF THE PAPER INDUSTRY TO NRA

(Continued from page 9)

withal to pay higher labor costs, and restore the value of properties and other equities. Industry expected this right to be in the form of marketing-control provisions in the Codes, with governmental assistance in the enforcement of such provisions."

"Teeth in the Codes"

This conception was quite general. It was fostered by the now familiar expressions such as "teeth in the Codes," "the chiseling 10 per cent" and "cracking down" on violators. It influenced the proposed codes which were submitted to the NRA. They contained the most elaborate provisions for industry government. Every conceivable subject was covered. Clauses were included by which price bottoms, differentials based on quantity, quality, class of customers, etc., standards of quality, grades and a thousand other things were definitely determined and fixed. We of the NRA did our best to separate the chaff from the wheat but it was a difficult thing to do. The whole idea was so new that there were no experts. Representatives of industry and representatives of government were equally ignorant and we all went to school together. I knew nothing whatever of the paper industry but I had had enough experience to know that the drafting of legislation is a very tricky job. It is extraordinarily difficult to determine in advance whether a law will or will not accomplish its purpose and even more difficult to determine that it will not accomplish a lot of things which its own draftsmen never intended or suspected.

Tried to Keep Paper Codes Simple

I know also that the degree of enforcibility of any law is in direct proportion to the conviction of the public that the violation of the law involves what the lawyers call "moral turpitude." When any considerable proportion of the people subject to a law, regard its violation as a mere peccadillo, the enforcement of that law will be difficult. We all violate traffic laws and most of us violated the prohibition law. The only question was whether we would be caught. But few of us steal or commit arson even when we know we can do so with impunity. With this in view I tried to keep the paper codes simple and to accept only provisions which I felt reasonably sure a large majority of the industry would regard as fair and reasonable and the violation of which they would regard as mean and dishonest.

This line is not an easy one to draw. There is a great divergence of opinion among both the economists and industrialists as to just how far codes should go in legislating on such matters as production control, price filing, minimum price and price differentials, service charges and other matters. Many industrialists believe that industry should be given very broad powers to legislate on these matters. Some economists believe in legislation of this type but believe also that the power of legislation should be lodged exclusively in the Government.

Many economists, however, believe that all such provisions are bad; that they tend to stifle competition and would result in monopoly and a consequent undue increase in price. The argument that such legislation is necessary to enable industry to carry its burden of increased labor costs is met by the answer that increased labor cost will increase purchasing power which in turn will increase volume, and that industry must expect to meet its increased costs by a reduction in overhead which will come with increased volume. Today the answer to that argument is there has been no increase in volume, and the prompt comeback is that prices have been increased faster than purchasing power.

Another Type of Opposition

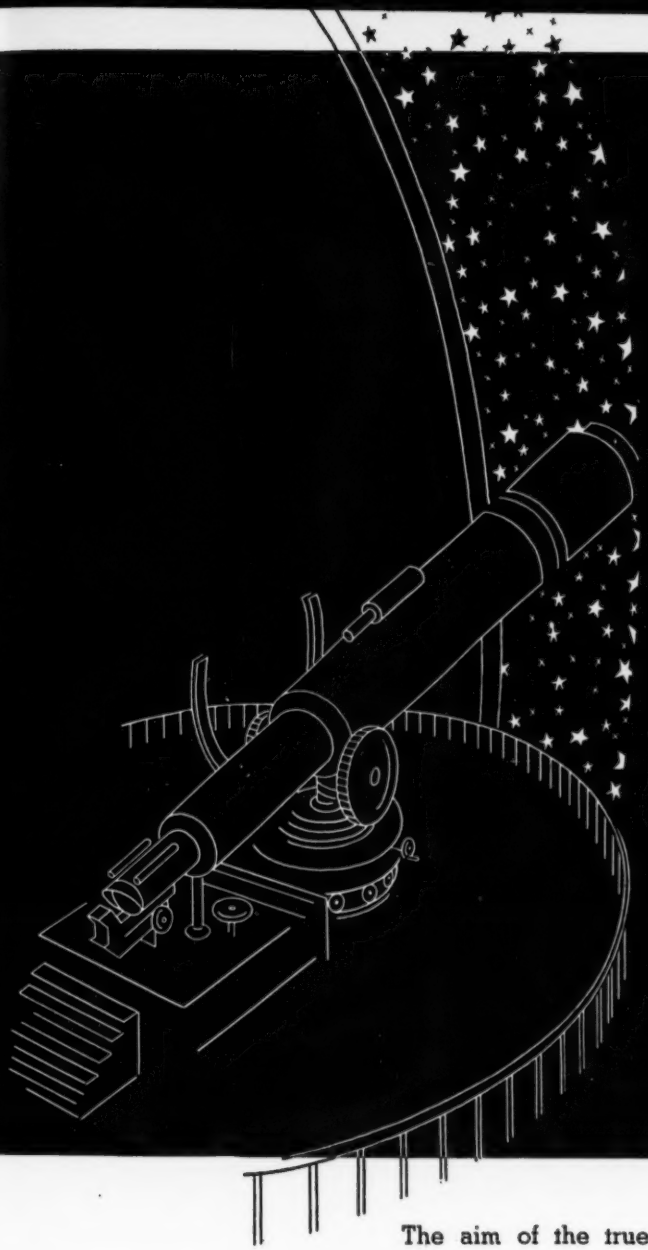
There is also another type of opposition to legislation of this character. It comes from those who see that whether the legislative power is lodged in the Government or in industry, enforcement will of necessity be a function of government. They also see that sufficient governmental machinery for the purpose does not exist and that in order even to make a beginning on enforcement a great deal more machinery must be set up. I was one of those who believed in a rather large measure of industry control of itself, but after I began to see more clearly the problems of enforcement I tried to visualize what it would mean. To me it was an unpleasant prospect. I saw a huge, constantly growing and necessarily political NRA reaching into every industry in an effort to enforce the Codes. I was convinced also that this effort would not have industry support and would fail. No NRA, no matter how large, and even though backed by the Department of Justice, the Army, the Navy and the Marine Corps, could succeed without such support. This conception was sufficiently alarming but was not the worst. If such an organization was once created it would become an enveloping octopus. Once in its tentacles industry would never escape. A great many industrialists who are by no means chiselers are included among those who fear too much legislation, not because of the character of the legislation itself but because of the inevitable attendant, too much government in business.

Early Trend Toward Restrictive Provisions

In the earlier days of code making the trend was towards restrictive provisions. Many of the earlier codes contain much matter of this kind. Gradually, however, there was a swing the other way. At present the pendulum has swung so far that it is practically impossible to obtain NRA approval of even the mildest provision of this type. Furthermore it is impossible to get from NRA any adequate assistance in enforcement of provisions already in the Codes.

As yet no statement of general policy has emanated from NRA but there have been numerous rulings on particular provisions from which a general policy of opposition to restrictive legislation may be spelled out.

As this policy has developed and its existence become more and more apparent it has resulted in a pronounced feeling of disappointment and pessimism throughout industry. Many industrialists feel that they have been betrayed; that they gave the government what it asked and that the government has failed to meet its obligations in return. In my opinion such an attitude is not warranted. It is due to too great expectations and to a lack of understanding of the inevitable results. If industry will adjust itself to a better understanding of the effects of restrictive code provisions it will be more optimistic. There is no part or branch of the paper industry that does not feel that it has been helped and benefitted by its code. To quote again from the sales letter to which I referred "no fair minded man will deny that conditions are so much better today than they were in 1933 that there is no comparison. Because the Code has failed to revolutionize hu-

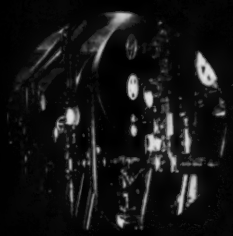


ENTERPRISE

FIRST IN THE COUNTRY

BACKGROUND

OLDEST IN THE COUNTRY



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man nature in six months, and has not yet performed the impossible miracles that some people predicted, is that a fair reason to condemn the whole program as a failure?"

Some Benefited More Than Others

It is an obvious fact, however, that some branches have benefitted much more than others and I have tried to analyze the situation to determine why this should be. It is not due to variations in code provisions. The codes for the various branches of the industry are substantially identical. Why is it then that some branches have much more success than others in deriving benefit from their codes? I think I know the answer. The groups which have been most successful are those who first realized that they must work out their own salvation and that this burden could not be shifted on to the shoulders of the NRA. They realized that the code was only an instrument.

These groups by constant contact and by the development and dissemination of accurate industry statistics have been able to educate their members to an appreciation of the fact that intelligent cooperation in industry pays dividends.

Industries which have proceeded along this line have something today which the repeal of the Recovery Act could not take away from them. They have a solidarity and an esprit de corps which they would never have had but for the NRA. Furthermore this does not mean that as individuals they have ceased to compete. Competition is as keen as ever but it is competition modified by a more accurate knowledge of demand and supply. It is competition which realizes that price cutting means war; that price wars like other wars produce only destruction and when the war is over the balance sheet shows red for everyone.

Follow Example of Successful Branches

If I have any word of advice to give to the Paper Industries it is to follow the example of their own successful branches. The codes have given you much of value; more than you, perhaps, realize. You have only to look back on the early days of 1933 to see how much progress has been made, but because all your expectations have not been realized do not give up hope. Hold on to what you have and strive for more.

First and foremost develop your industry statistics. Make them simple and accurate. Collect them promptly and publish them at the first possible moment. Your industry, every industry, is full of rumors. Most of them have no basis in fact or at best only a small grain of fact. Nothing spikes rumors and adds to confidence as effectively as reliable statistics promptly furnished. As you advance further in mutual understanding you will begin to get away from the idea that anyone gains any advantage by secrecy in regard to his operations. It is my observation that most secrets in the Paper Industry are sort of public secrets. They are not broadcast but everyone knows them. Codes, however, in all cases require that information furnished by a member shall be treated as confidential and this rule is strictly adhered to except where members of an industry voluntarily waive its enforcement. It has been generally waived in some branches of the industry and as far as I can see no one has suffered as a result except that notorious old lady "Dame Rumor." It has cramped her style considerably.

I have noted also that the groups that operate most successfully under codes have the largest number of meetings. They are continuously getting together in industry groups and in regional and divisional groups. They get to know each other better and as they do they talk over their affairs with greater frankness. Out of it comes mutual understanding and respect. I heard of one manufacturer who complained that now that he had found out what decent fellows his competitors were it had destroyed all the pleasure he formerly got in doing business in his old ruthless fashion.

We Americans are prone to swing from one extreme to another. Last year we thought the NRA and the codes were going to revolutionize business and remake people practically overnight. Now we are inclined to swing to the other extreme and because our extravagant expectations have not been realized, we think that the NRA contains nothing of value. We were wrong in the first place and we are wrong now. The truth is half way between and now that we realize it we are not going to be such fools as to waste our great opportunity.

Indianapolis Demand Expands

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., September 24, 1934—A very gradual expansion in demand was noticed during the last week, causing the paper trade to believe that the fall season actually is under way. The demand was nothing to boast of, but it was an improvement over trade during the first of September. The trade expects the coming month to show more increase, but how much is problematical. Factory and jobbing house stocks are said to be low in many lines, particularly in krafts, and replacements will have to be made soon if there is any decided change upward in demand.

Much the same thing is true of the container and box trade. Production has been held in keeping with demand during the summer and factory stocks have not been built up to any appreciable size. Some of the plants report a fine business and seem to be working steadily. Orders are active, though they do not call for enormous quantities.

The fine paper market has shown little change in the week. Demand is not so heavy as it was prior to the first of the month, but there is an undertone of confidence that October will see a considerable increase in business. Inquiries seem to be plentiful, which is an encouraging indication. Quite a big catalogue and direct mail literature is on the boards, according to local printers.

Demand for newsprint holds up remarkably well. Volume is ahead of the same time last year with every indication of additional volume before the end of the month. Much of the lineage increase seems to have come from local advertisers, particularly specialty shops and department stores, who started off the fall season with a bang. Newspaper executives believe the impetus will carry on until the holiday season takes its place.

Paper stock men are a trifle more encouraged this week. Demand for rags appears to have increased and prices are somewhat stronger. Paper also is stronger.

To Appeal Seaborne Decision

Manufacture of designed papers employing the Seaborne invention is at issue in an appeal promptly to be filed by the attorneys for American Lakes Paper Company from the decision of Judge Stone in the Western District of Wisconsin.

Judge Stone's recently announced finding for the defendants, Nekoosa-Edwards Paper Company and the B. F. Goodrich Rubber Company, involved the validity of the Seaborne patent.

Code and Budget News of NRA

Pulp Industry Budget for 1934

WASHINGTON, D. C., September 26, 1934—The Executive Authority of the pulp division of the paper and pulp industry has made application to NRA for approval of its budget and contributions by members of the industry from January 1 to December 31, 1934.

The total amount of said budget for the said period is $50,000. The basis of contribution shall be as follows:

"This expense is prorated monthly on the basis of tonnage produced. The bases of assessment per ton are as follows:

	Mechanical Pulp	Chemical Pulp
(a) Pulp produced for sale in the open market....	2c	4c
(b) Pulp produced for conversion into paper or other products coming under the jurisdiction of the General Paper and Pulp Code, by the same company producing the pulp..	1c	2c
(c) Pulp produced for conversion into paper or other products *not* coming under the jurisdiction of the General Paper and Pulp Code, by the same company producing the pulp	½c	1c"

A copy of said budget is attached hereto marked Schedule "A" and hereby made part hereof. Additional copies are available upon request at the office of the National Recovery Administration, Room 3314, Department of Commerce Building, Washington, D. C., and at the office of the Executive Authority of the Pulp Division of the Paper and Pulp Industry, 122 East 42nd Street, New York City.

NOTICE IS HEREBY GIVEN that any criticisms of, objections to or suggestions concerning said budget and said basis of contribution must be submitted to Deputy Administrator David H. Tulley, Room 209, National Savings & Trust Building, Washington, D. C., prior to Thursday, Octber 4, 1934, and that the Administrator may approve said budget and basis of contribution in their present form and/or in such form, substance, wording and/or scope as they may be revised on the basis of criticisms, objections or suggestions submitted and supporting facts received pursuant to this notice, or other considerations properly before the Administrator.

Any person submitting any such criticism, objection or suggestion must state his name, the persons or groups whom he represents, and the facts supporting his objection, criticism or suggestion. All matter submitted will be given due consideration and the Administrator will act after consulting with such of his advisors as he may deem appropriate.

PROPOSED BUDGET FOR THE PULP DIVISION OF THE PAPER AND PULP INDUSTRY FOR 1934

Items	Estimated Expenditures	
SALARIES		
Executive Secretary	$8,000.00	
Statistician	3,600.00	
Office Staff	7,400.00	
Total Salaries		$19,000.00
OFFICE EXPENSES		
Rent	$1,200.00	
Telephone-Telegraph	2,500.00	
Furniture-Equipment	1,600.00	
Stationery-Supplies	3,000.00	
Postage	1,500.00	
Miscellaneous	1,200.00	
Total Office Expenses		$11,000.00
GENERAL EXPENSES		
Travel:		
Code Authority Members	$2,000.00	
Employees	2,300.00	
P.I.A. Assessments	12,500.00	
Pulp Testing	3,200.00	
Total General Expenses		$20,000.00
Total of all Expenses		$50,000.00

China Clay Producing Industry Code Approved

National Recovery Administrator Hugh S. Johnson has approved a code of fair competition for the china clay producing industry, effective October 2, 1934.

The code was submitted by the Southern China Clay Producers Association, which was changed subsequently on Sept. 29, 1933, to the China Clay Producers Association, claiming to represent in excess of 90 per cent of the industry.

In his letter to the President setting forth his approval, the Administrator points out that the china clay industry in the United States is of relatively recent development. Prior to 1900, approximately 90 per cent of the china clay used in this country was imported from England. Today about 70 per cent is of domestic origin. The greater part of the industry is in the South, Georgia being the chief producer.

Prior to August 15, 1933, the minimum wage rate was ten cents an hour for a 48-hour week. September, it was increased to 15 cents an hour. Under the code, the minimum in the South is 24 cents an hour, or $9.60 for a 40-hour week. This is in comparison with a 65-hour week, at 20 cents an hour in 1929.

The code also fixes a 40-hour basic maximum workweek. In order to meet adverse conditions of production, due to seasonal inclement weather, employees engaged in the open pit mining are permitted to work an average of 40 hours per week in any four or five week period that shall correspond as near as may be to the calendar month, with a maximum of 48 hours, in any seven-day period.

It is provided, however, that such overtime shall be paid for at the rate at least of time and one-half for hours worked in excess of 40 per week. Watchmen are allowed 56 hours a week, and clerical help is limited to 40 hours a week over a five week period and not more than 48 hours in any one week. Executives and technical employees are not limited by the hours provisions when earning $35 a week or more in the North and $30 a week in the South. Emergency maintenance and emergency repair employees are also excluded.

The minimum wage for employees engaged in processing of products is fixed at 24 cents an hour in the South and 35 cents an hour in the North. The minimum pay for clerical help is $15 a week, except for office boys and girls and messengers, who are to receive not less than 80 per cent of the minimum.

Glazed and Fancy Paper Industry Submits Code Budget and Asks for Code Modifications

The Code Authority of the glazed and fancy paper industry has submitted for NRA approval a budget of $19,830, the estimated amount for code administration expense during the period from July 1, 1934, to July 1, 1935.

For budget support, the industry would assess members at the rate of $2.00 per $1,000.

Estimated expenditures under the budget include: $11,000 for salaries; $4530 for office expenses; and $4,300 for general expenses.

The Code Authority also has asked a termination of the exemption conferred by Administrative Order X-36, which frees members of an industry form contributing to the support of a code other than the one which embraces their major line of business.

NRA approval also has been asked of a proposed modi-

(Continued on page 42)

LOCKWOOD'S DIRECTORY

OF THE PAPER AND ALLIED TRADES

F O R 1 9 3 4

A complete, up-to-date reference book of the paper industry, for the busy executive who must have reliable information at his finger tips.

Entire contents classified under separate headings for the United States and Canada, alphabetically and geographically arranged by states.

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Envelope Manufacturers

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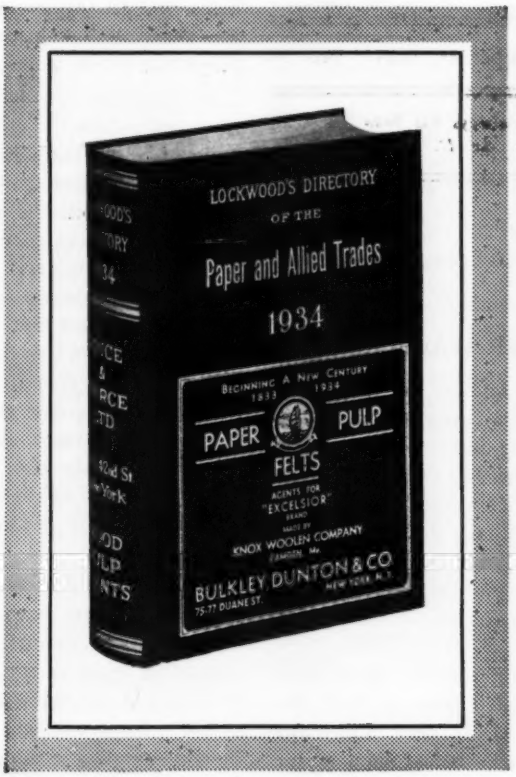
Paper Stock and Rag Dealers
Paper Bag Manufacturers
Paper Box Manufacturers



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COMING EVENTS

Paper and Pulp Section, National Safety Council, annual convention, Hotel Statler, Cleveland, Ohio, October 1-4, 1934.

THE FALLACY OF HIGHER WAGE RATES

Thomas B. Macaulay, the well-known English historian, writing in 1857 to an American correspondent said in part: "You may think your country enjoys an exemption from these evils; I will frankly own to you that I am of a very different opinion...I apprehend you will, in some season of adversity...do things that will prevent prosperity from returning. There will, I fear, be spoliation. The spoliation will increase the distress. The distress will produce fresh spoliation. There is nothing to stop you."

Allen W. Rucker, in collaboration with N. W. Pickering, president of Farrel-Birmingham Company, Inc., Ansonia, Conn., in No. 8 of a series of very interesting little booklet-editorials just printed, states that of the accuracy of the above prediction, there is no better illustration than the growing endeavors of organized labor to dominate industry and compel wage increases irrespective of the values produced. Encouraged by the Government's championship of high dollar wages and incited by the rise in the cost of necessities occasioned thereby, union activities have become steadily more aggressive. Unrest, save for the San Francisco outbreak and the textile walkout, has thus far been prevented from developing into a major strike by increases in wage rates. That, however, does not solve the problem. The higher wage rates simply cause still higher prices and those in turn encourage fresh discontent and demand for still greater wage increases.

In the true interests of both society and all wage-earners, if not of industry, is it not high time that Government and unions alike were brought to some appreciation of the significance of certain fundamentals, to wit:

1. That wage increases without regard to productivity of workers cause manufactured goods prices to rise, with consequent shrinkage in both demand and employment.

2. That whenever labor receives an excessive share of what it produces, the dollar income per year of the worker begins to decline almost without regard to how high the wage *rate* is lifted.

3. That over the long term, the yearly dollar income of factory workers varies directly with the yearly output value, and scarcely at all with either the hourly wage *rate* or weekly wage rate.

4. That whenever, from any cause (the shorter work week, for instance), the productivity per worker drops below the general average for the industry or community, the yearly dollar income of the worker also drops, irrespective of the wage *rate*.

In short, the *annual income in dollars* of any worker must vary directly with the values produced *and sold*, and can be but temporarily influenced by high dollar wage rates unaccompanied by a corresponding increase in output values. There is a point beyond which increases in wage rates are destructive to the interests of wage-earner, industry and society. Put another way, economic law compels the payment of annual wages proportionate to output value, and that law cannot be evaded without the exaction of a serious penalty from those responsible.

Messrs. Rucker and Pickering state that the data presented in the booklet point to the fallacy and the futility of arbitrary increases in wage rates.

The same data also strongly indicate that the national welfare as well as the interests of labor and industry lie in increasing the productivity per worker—and nowhere else.

Increased productivity provides the larger income desired by workers without the price increases feared by consumers and manufacturers; it provides the basis of expanding employment with wider demand for industrial products; it provides society with goods at prices that permit volume consumption. Increased productivity is the common meeting ground of all interests.

That fact suggests at once the advisability of a positive and constructive course of action for industry to replace the negative and critical attitude now prevalent:

First, a promotion of thorough understanding among governmental and code authorities and labor leaders that arbitrary increases in wage rates must inevitably prove futile and will certainly retard recovery.

Second, that in return for freedom from governmental interference and labor disturbances, industry will undertake a program of complete modernization of processes and equipment designed to increase individual productivity ...and thereby enlarge the annual income of workers *without any increases in prices.*

The time is opportune for both moves. The Administra-

tion has exhausted its possibilities for promoting industrial recovery in an orderly manner with but indifferent success. Recourse may next be had to expedients of an even more questionable nature if a constructive program is not in the meanwhile presented.

Hence, industry's responsibility for action now is second only to the opportunity and rewards which should follow.

Let management now come forward with its plan... Modernization of processes and equipment with increased productivity and income per worker and no increase in prices in return for freedom from external interference.

Higher Freight Rates on Pulp Withdrawn

[FROM OUR REGULAR CORRESPONDENT]

ALBANY N. Y., September 24, 1934—Announcement of withdrawal of the proposed higher freight rates on imported pulp to the local port terminal was made this week by the Trunkline Association Railroads. Officials of the Port District Commission said that they would await the possible filing of new rates before presenting its case to adjust port absorption and rate charges generally with the Interstate Commerce Commission. The schedules on pulp were originally filed to become effective in July but were suspended following complaints from numerous paper concerns and the Regional Chamber of Commerce. It was contended that the rates were discriminatory in omitting this city from a reduction to fifteen cents a hundred pounds from the other seaports and to about twenty-one cents in Central Freight Association territory, west of Buffalo. Omission of this city from the proposed tariffs would have left the port with higher rates to interior points than Boston, New York, Baltimore and Norfolk and would have practically ruined the huge pulp business handled here. The Port Commission has reached an agreement with the railroads under which no new rates will be filed with the Interstate Commerce Commission until they are thoroughly examined by the local board. Shippers in the Pacific Northwest and also in New Jersey were among those that protested the proposed new rates.

Schroon River Mill To Open Soon

[FROM OUR REGULAR CORRESPONDENT]

WARRENSBURG, N. Y., September 24, 1934—Industries in this section are again in operation following the rising of the level of the Schroon River after recent rains. Preparations are also under way for opening the dam owned by the Schroon River Pulp and Paper Company and it is expected that the water will be high enough to start the grinders as soon as the mill is ready for operation. Following reorganization the company is now making rapid progress in overhauling its equipment and it is understood that operations will be resumed within the next month. It was announced that as soon as quantities of raw materials, paper pulp and sulphite, arrive that the machinery would be placed in operation. Cessation of activities have been disastrous to business establishments here during the past year while the funds of nearly 100 employes have been exhausted. News of the reopening was welcomed by all residents and predictions of a general business boom are forecast. Superintendent Franklin E. Pasco has issued orders that the raw materials already purchased be shipped with all possible haste so that work on the large number of orders can be started.

Wants Paper Mills for Alabama

A press dispatch from Montgomery, Ala., under date of September, states that Col. Page S. Bunker, State forester, declared yesterday the establishment of paper mills in Alabama to manufacture newsprint out of Alabama pine would have a profound influence on the State's industrial situation.

A firm advocate of the plans of the Alabama Conference on Paper Products to establish newsprint paper mills in the South using Southern pine, Col. Bunker pointed out that the time was ripe for this step.

"The machinery in Northern paper mills, in many cases is obsolete," he said, "and now is the time to bring those mills to the South and establish new mills here rather than put more money into the repair or replacement of old equipment."

Col. Bunker declared that approximately 20 per cent of the wage earners in the State make their living in forest industries or in the manufacture of the forest products.

"And the development of newsprint paper mills," he added, "will increase this proportion markedly."

In Alabama today there are 22,000,000 acres of actual and potential woodland, and Col. Bunker estimated that at least 10,000,000 acres can be devoted to the production of pulpwood for the proposed newsprint mills.

"Planting will comprise only a minor feature of the reforestation of woodlands that are now non-productive," he said, "since natural reproduction readily ensues in most instances where reasonable care is given the land. The State maintains a forest nursery near Livingston whose output will be available, to some extent, for the planting that may be required."

Col. Bunker declared that the woodlands could produce a cord of pulpwood an acre at a direct cost not exceeding 50 cents per cord before cutting. Labor costs and other expenditures are very low, he stated in comparison with other production enterprises.

Alabama already has two paper mills manufacturing kraft paper and the new mills proposed, availing themselves of recent developments in the chemistry of paper pulp, can produce newsprint at a price, quality and quantity that compare most favorably with Northern mills.

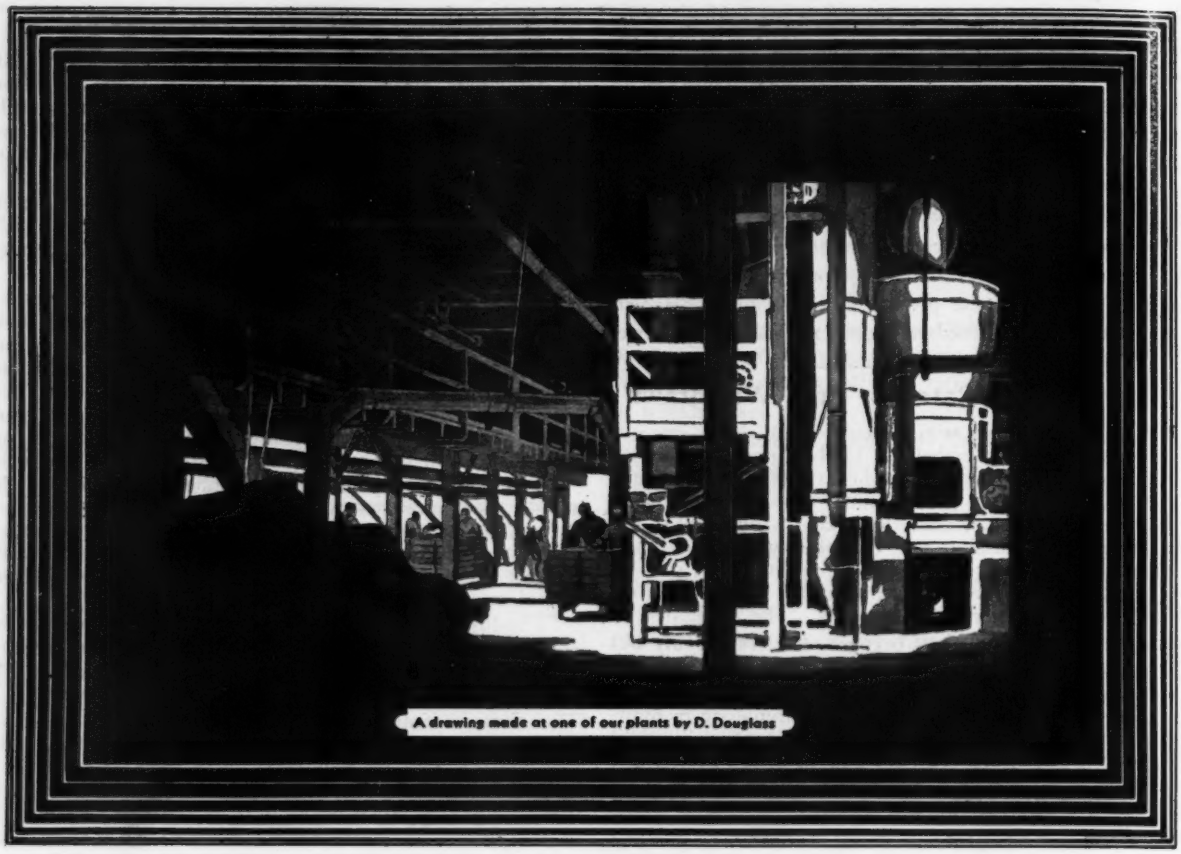
The Alabama Conference on Paper Products plans to ask the 1935 Legislature to exempt or lower the tax rate on lands devoted to production of pulpwood, and to exempt for a specific number of years all new paper mills using Alabama pine for newsprint that locate in this State.

Strike in Paper Mill Settled at Tuscaloosa

TUSCALOOSA, Ala., September 14, 1934—Wheels in the Gulf States Paper Corporation plant here began to turn today for the first time since August 30, unionists and mill officials having reached an agreement yesterday ending a strike affecting 750 workers.

Bruce Shelton, publisher of *The Tuscaloosa News*, sitting as mediator at conferences of the mill management and representatives of two unions, announced the agreement and immediately pickets around the plant were called off.

The shipping department was the only one open at the mill today, but others will be opened within a few days, officials said. Under the agreement, both the International Paper Makers of America and Pulp, Sulphite and Paper Mill Workers Union will be recognized. There will be no "closed shop" unions or "employes' clubs" and organization activities on company property will be stopped, it was announced.



A drawing made at one of our plants by D. Douglass

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Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Rosin: Grades, The Standard Unit, The Round Barrel

By George F. Kennedy[1]

Grades

There are two distinct classes of rosin, gum rosin and wood rosin.

Gum rosin is graded by color from the highest grade to the lowest grade, and these grades are designated by the following letters: X, WW, WG, N, M, K, I, H, G, F, E, D and B, and designated *gum rosin*. There is a special classification for unrefined wood rosin which is designated as F. F. *wood rosin*.

In addition to *gum rosin* there is also *wood rosin* and *reclaimed rosin* or recovered from strainer, batting, or rosin dross. All rosin barrels containing gum rosin must be marked *gum rosin;* all rosin barrels containing wood rosin must be marked *wood rosin,* and all rosin barrels containing *reclaimed rosin* must be marked *R. C.* followed by the grade.

The Standard Unit and the Round Barrel

All rosin is sold on a basis of 280 pounds gross weight which is called the standard unit, and all quotations on rosin are on this basis. The unit weight was derived, in the early days of the industry, from the 20 stone unit (there are 14 pounds to the stone). The round barrel though is the actual package, and one round barrel of rosin weighs approximately 500 pounds gross.

A *round barrel* is equal to 500/280 or 1.7857 standard barrels of 280 pounds gross weight.

A *standard barrel* is equal to 280/500 or 0.56 round barrels of 500 pounds gross weight.

The tare due to the barrel is approximately 16 per cent, and, therefore, *the weight of the barrel is actually about 80 pounds.*

80 x 0.56 = 44.8 tare per 280 pound unit (16 per cent).

280 lb = 44.8 pounds = 235.2 pounds of rosin per 280 pounds gross weight unit.

The minimum carload of rosin is 75 round barrels, the average carload is 100 round barrels, and the maximum carload is 125 round barrels. Under official classification rosin in carload shipments is classified as 6th class, under Southern classification 8th class, and under Western classification 9th class.

The available supply of rosin is at the ports of Charleston, S. C.; Savannah, Ga.; Jacksonville, Fla.; Mobile, Ala., and Pensacola, Fla., and there are through commodity rates for water and rail shipments of rosin from these ports which have been established by coastwise steamship lines, such as the Merchants and Miners Transportation Company, the Clyde-Mallory Lines and the Ocean Steamship Company of Savannah.

It is important in the buying of rosin that it should be emphatically understood that all rosin barrels must conform to the specifications of the Savannah Board of Trade. In addition to the *By-Laws and General and Special Rules of the Naval Stores Trade* adopted by the Savannah Board of Trade there is also *the Naval Stores Act and Regulations for its Enforcement* as provided in *United States Department of Agriculture—Miscellaneous Circular No. 22.*

Special Rule No. 2 of the Savannah Board of Trade is as follows:

2. To be in merchantable order.

(Amendments and addition to Rule No. 2. Rosin—Posted Oct. 29th, effective Nov. 5, 1930.) Barrels must have two good heads not exceeding 1¼ inches in thickness, the top head to fit close and to be strapped or well-lined. Straps shall be at least three to four inches in width and at least one inch in thickness and must be securely fastened with 8d nails. Staves shall not exceed 1 inch in thickness or be less than ¾ inch in thickness and shall be 36 inches in length, the maximum variation over or under 36 inches to be one half inch. All staves, however, in any individual barrel to be of uniform length. One iron hoop on each head to 1 to 1¼ inches wide, No. 17 or 18 gauge, and one iron hoop on each bilge 1 to 1¼ inches wide, No. 17 or 18 gauge, all hoops properly riveted; that is to say, four iron hoops on every barrel.

All hoops shall be properly fastened on the barrels with at least two special Hoop Fasteners, or at least two nails thru each hoop.

Barrels to be made on 22 inch head and 24 inch bilge truss hoops.

All barrels to be properly filled with rosin (a properly filled barrel should have a chime of about 1 to 2 inches after head is in place).

[1] Bulkley, Dunton & Company, 75 Duane Street, New York, N. Y. Selling Agents for the American Bewoid Company.

Special Rule No. 3 is as follows:

3. Rosin shall be bought and sold by the barrel of 280 pounds gross and shall be weighed on five (5) pound notches of scale beam, the *pounds between 5 pound notches to be thrown off* and proper allowance to be made for green timber, moisture, and adhering dirt, and every barrel shall have its weight and grade distinctly marked on it. Inspectors must also make proper deductions in weight on all rosin where staves or heads are thicker than is prescribed in Rule 2. Said deductions to be noted on certificate.

The daily rosin market at Savannah, Ga., and Jacksonville, Fla., is given in the Daily Papers, as prices per 280 pound gross weight unit of rosin at Savannah and Jacksonville respectively and the other naval stores ports follow these prices very closely. The price per round barrel of rosin may be closely approximated by multiplying the price of 280 pounds gross weight unit by 1.7857 and the price per 100 pounds net weight of rosin may be closely approximated by multiplying the price of the 280 pound gross weight unit by 0.42517.

Storage of Rosin

The quality of the rosin does not deteriorate on storage and the rosin barrels may be stored in the open indefinitely.

Weekly Production Ratio Report

Reports to the Paper Industry Authority show the following over-all industry production ratios:

	Reporting Mills		Total Production Ratio
	Number	Capacity	
*Week Ending September 1, 1934.....	246	97,628	62.4%
*Week Ending September 8, 1934.....	257	88,099	49.8
†Week Ending September 15, 1934.....	209	76,633	55.5

Detailed statistics showing the number of mills and average production ratios for the industry by ratio groups are given below:

Mills reporting production ratios between the following limits	Week ending September 1, 1934*		Week ending September 8, 1934*		Week ending September 15, 1934†	
	Number of mills reporting	Average rate of production	Number of mills reporting	Average rate of production	Number of mills reporting	Average rate of production
0— 25%	52	5.7%	72	6.8%	44	7.3%
26— 50%	90	42.3	69	39.0	51	40.0
51— 75%	73	63.0	74	65.5	59	62.3
76—100%	62	90.3	42	87.8	55	89.8

* These statistics are revised and corrected to conform with subsequent corrected mill reports.
† Subject to revision.

Revised statistics covering delinquent mill returns for weeks ending September 1, 8 and 15, 1934, will be shown in later reports.

Rebuilding Mead Corp. Laboratory

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, September 24, 1934—Satisfactory work is being accomplished in the rebuilding or restoring of the four-story laboratory building of the Mead Corporation, which was damaged by fire 10 days ago, at Chillicothe.

R. T. Houk, Sr., of this city, who is vice-president of the company, stated that the laboratory would be put in its former condition as speedily as possible. The fire loss of approximately $75,000 was fully covered by insurance.

The blaze was caused by spontaneous combustion. Activated carbon, reclaimed from soda in the liquid used to cure paper, fed the fire.

Eight hundred sacks of the carbon were stored in the building, according to word from Chillicothe.

The damaged structure was erected about five years ago. Firemen prevented the flames from spreading to other buildings.

Standards for Checking Opacity Meters

Glass standards for checking the accuracy of opacity readings in testing paper and other sheet materials can now be obtained from the National Bureau of Standards, Washington, D. C., according to an announcement in its Letter Circular No. 418, which also contains detailed directions for their use.

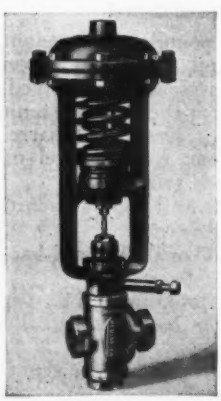
Because of the importance of the opacity test in the evaluation of tracing cloth, transparent wrapping papers, envelope paper, envelope windows and, particularly, printing papers, the standard method of the Technical Association of the Pulp and Paper Industry has been the subject of critical studies by several investigators, the results of which indicated various sources of error. An investigation of these was reported in the Bureau Research Paper No. 660, Sources of Error in Measuring Opacity of Paper by the Contrast Ratio Method. As this study disclosed that the opacity by the TAPPI method may differ from the true contrast-ratio opacity, as defined in the Bureau Circular No. 63, as much as 0.04 or 4 percent, the necessity of opacity standards for the calibration and adjustment of opacity testers is obvious.

The standards are made of opal glass, are 5 x 20 cm. rectangles, 1.5 mm. thick, and are permanent and cleanable. The opacities of them, according to the TAPPI method, fall between 80 and 90 percent (0.80 and 0.90 contrast ratio), which is the critical range for printing papers. A standard may be purchased from the Bureau for $15.00 or may be borrowed for one week free of charge.

Copies of the Letter Circular can be obtained free of charge from the Bureau. Copies of the research reports mentioned can be purchased from the Superintendent of Documents, Washington, D. C. for 5 cents (cash).

New Ball Bearing Regulator

A new pressure reducing regulator has been developed by the Mason-Neilan Regulator Company of Boston, manufacturers of automatic regulating and control equipment.



This regulator is known as the No. 505 Series and is equipped with non-corrosive stainless steel ball bearings which roll up and down with the valve stem travel and reduce friction to a minimum. Ball bearings also turn freely under the spring adjusting screw and permit pressure settings to be easily accomplished.

Flexible, multiple springs permit the use of larger diaphragms and are said to increase the sensitivity and accuracy of the regulation. A self-aligning spring button prevents spring tilt and side sway from interfering with smooth operation. These regulators are equipped with the Centroguide Valve, and advanced type of valve in which the valve plug is centrally guided at the top and bottom of the valve body. It is claimed that this practically eliminates wire drawing and cutting of the valve plug and valve seat rings. Grease sealed stuffing boxes can be furnished for those services where it is desirable.

An illustrated bulletin describing these new regulators may be obtained on request from the Mason-Neilan Regulator Company, 1190 Adams Street, Boston, Mass.

Hog Fuel Burning and Handling Equipment*

By Harry S. Bastian[1]

Abstract

A presentation of the economic trends in the use of hog fuel.

A description of several types of hog fuel furnaces.

The evolution through which the fuel known as "saw mill waste" or "hog fuel" is passing is perhaps as revolutionary as that of any other branch of steam engineering. For years saw mills, at which this fuel originated, burned it in simple furnaces under equally simple boilers to produce their steam. Having more waste than they needed for this purpose, there was no thought of economy or regulation in its use. In fact, saw mills once regarded hog fuel in much the same light as early oil refineries regarded gasoline, mainly, a by-product that was more or less of a nuisance, to be disposed of as conveniently as possible; in both cases actually prompting legislation to regulate its disposal.

The evolution in question is marked by several clearly defined trends; first, by the rapid strides made in the economics of hog fuels usage and its advancement to a scientifically controlled and technically supervised plane of usefulness; second, by the fact that this evolutionary process is keeping pace with that of other branches of steam engineering; and third, by the fact that hog fuel is now being engineered on the basis of its own fuel characteristics and qualities, and not by a more or less perfunctory adaptation of analagous practices.

A scarcity of available hog fuel, more likely to be felt as the Code of Fair Practice for the lumber industry gathers momentum, results in justifying expenditures to increase hog fuel efficiency out of proportion to the actual value of the fuel itself, particularly in the case of the pulp and paper mills. These mills, as a rule, do not produce enough wood waste to supply their full fuel requirements, and what they do supply does not have the best thermal quality for fuel. Consequently those mills that are not able to secure enough purchased hog fuel to make up the deficiency must resort to coal or oil, which are more expensive. Obviously if such mills can be made to burn their available wood waste more efficiently, a corresponding saving will be made in the use of the more costly fuels and the saving will be calculated on the basis of these savings rather than on the value of the hog fuel saved. The problem then resolves itself not into burning less hog fuel for the steam output required, but to increase the steam output for the fuel burned. This indicates that the future trend of hog fuel burning will be turned toward more efficient furnaces of moderate capacity rather than to extremely high capacity installations designed in the past. Since the developments cited above, prompted largely by the periodic and relative scarcity of hog fuel, are designed to increase the steam output for a given consumption of hog fuel, they should be of especial interest to pulp and paper mill operators.

It is the endeavor of the author to portray the stage to which this evolutionary process has at present attained, and to indicate the lines of its probable future advancement. The history of the transition of hog fuel from a true waste product to its present status as a carefully husbanded resource has been well chronicled in numerous published articles, tables, test data, etc., one of the latest and most comprehensive of these being the paper presented by Beecher at your annual meeting in 1931. (Pacific Pulp and Paper Industry, August 20, 1931.) For that reason perhaps the majority of those whose attention may be directed to this paper are conversant with the appearance, chemical composition, texture and fuel value of hog fuel. Consequently the author has felt free to refer to commonly known characteristics of this commodity without detailed explanations or definitions.

* Presented at the fall meeting of the Technical Association of the Pulp and Paper Industry, Portland, Ore., Sept. 10 to 13, 1934.

[1] Combustion Engineering Company, Portland, Ore.

Furnace Design

A most important detail in this evolution is that of efficient furnace design. For years the flat grate dutch oven furnace has been accepted as the standard, and where high capacity and simplicity of operation are paramount requirements this furnace still maintains a dominant position. Where wet fuels are burned, the dutch oven furnace, whether of the flat or the inclined grate type, is in practically universal use. Since in paper mill operation there is nothing but wet fuel available, this paper has been confined to that type of furnace.

A "dutch oven" furnace is one which is enclosed on all sides except one, which opens into the boiler setting proper, and by which opening the gases of combustion enter the setting. All dutch oven furnaces operate on the basic principle that the combustion of a highly volatile solid fuel like hog fuel is not a single process, but is divided into three operations, preliminary drying, gasification of the volatile matter, and, combustion of the fixed carbon and generated gases.

These operations must be continuous, and the shape of the furnace must be such that conditions are favorable for promoting them. In the flat grate furnace all three operations take place concurrently, and the furnace must therefore provide facilities for simultaneously driving off the entrained moisture, gasifying the volatile matter and mixing it with the necessary air of combustion, and supporting the combustion of the fixed carbon. The furnace should and does act much as a gas producer, the gasification being promoted largely by radiated and reflected heat from the furnace walls and roof. Securing a suitable reflecting action by the hot brick surfaces on the surface of the fuel, and securing a satisfactory mixture

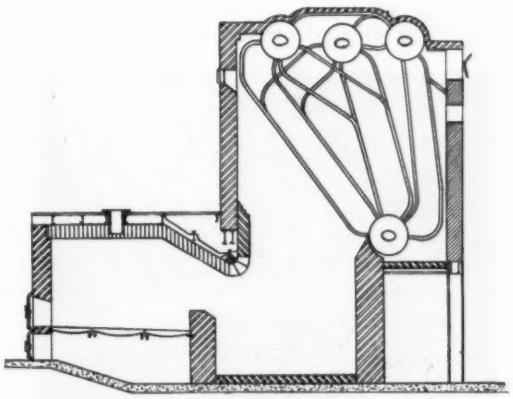


FIG. 1
Typical flat grate dutch oven furnace.

of combustible gas and air are the features that dictate the design of the furnace.

Fig. 1 shows a typical example of a modern flat grate dutch oven, with which the majority of you are no doubt familiar. This furnace is designed to burn an averag grade of hog fuel with natural draft. In this particular installation a grate area of 1 sq. ft. to 42 square feet of boiler heating surface was provided. With dry hog fuel a grate ratio of 1 to 50 could be used, and with wet hog fuel, say 50 per cent moisture, this ratio should be reduced to about 1 to 35. This latter ratio is also preferable where hemlock or spruce is used, even with a lower moisture content, owing to the slower rate of gasification and combustion, and also to its being somewhat lower in volatile combustible. The drop arch at the rear is used to impart a sudden change in the direction of flow of the gases leaving the furnace, creating a turbulence, and consequently a more thorough mixing of gases and air, vitally necessary for effective combustion. The drop arch also provides a heat reflecting surface for the rear of the fuel pile that faces the open furnace throat. In this furnace the phenomena of drying, gasifying, and burning all take place indiscriminately. Later a furnace is described in which these operations are separated into zones, promising a more efficient result. A certain detrimental effect of the drop arch is also considered.

This type of furnace is often benefited by providing more refractory radiation surface, obtained by building a longitudinal center wall that divides the grate area and furnace into sections. The beneficial action of this additional radiating surface more than offsets that reduction in grate area by the amount occupied by the wall, with a net gain in furnace capacity. Very wide furnaces may have two or even three of these center walls.

Water Cooled Grates

An important development of the flat grate furnace is the water cooled grates. Grate bar maintenance and renewal is an item of considerable expense in burning hog fuel. In some furnaces deep ash pits are provided to minimize the effect of ash pit heat on the grates. In other furnaces water is carried in the ash pit to cut down this heat, which is caused by fuel dropping through the grates and burning. The item of grate bar maintenance has been largely eliminated in some plants by the use of water cooled grates. These grates take the form of hollow bars covering the bottom of the furnace, through which water is circulated. A form of one-piece welded steel tubular grate was illustrated in an article some time ago by W. A. Struthers. (Combustion, Feb. 1930.) Grates of this type are in service in the plant of the Weyerhauser Timber Company at Longview, Wash.

Another form of welded steel grate is made by placing two small channels lip to lip and welding them to form a square box or tube. These are in turn welded to headers similarly formed of other channels. The water circulates through them from one header to the other. Grates of this type are in use at the plant of the Oregon Pulp and Paper Company, at Salem, Ore.

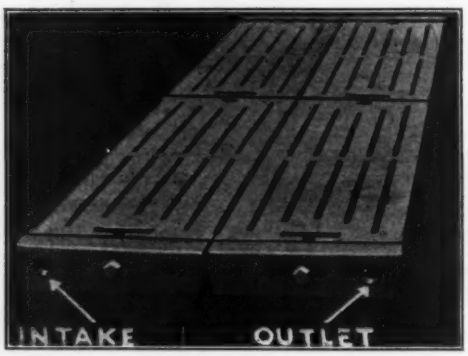


FIG. 2
Cast iron water cooled grate.

These grates, being steel, are susceptible to damage if the water supply fails, and precautions must be taken to insure continuous flow. To eliminate this hazard a cast iron water cooled grate has been developed, and is in successful use in several plants. This grate is shown in Fig. 2. Sectional cast bars, made of a chrome-nickel alloy, are bolted together with heat-resisting bolts and headers at the front and rear of the furnace carry the cooling water from one section to another. Grates of this type are in use at the plant of the Columbia River Paper Mills, Vancouver, Wash.

To test the durability of these cast grates under failure of the water supply, one installation was tested by cutting off the water from one furnace while a 24 hour load was carried. The grates successfully withstood eleven weeks service without water and showing but little deterioration at the end of this period. The test was then voluntarily terminated, since it was demonstrated beyond question that the grates could stand up under failure of the water supply.

All practical types of water cooled grates well justify their cost, since their life is many times that of the cast bar grate while the initial cost need not be excessive; they render unnecessary the use of water in the ash pit, and they permit the use of pre-heated air at high temperatures. However, perhaps the most noticeable feature of their use is that they are non-slagging. An ordinary cast grate will be afflicted with a plastic slag that closes the air openings, so that by the end of the week those openings are partially, if not entirely, closed and must be scraped, hammered or chipped open. Slag will not adhere to the water cooled grate if properly designed; it breaks up into small pieces as it forms and may be brushed off the grate surfaces at will.

With the increasing economic importance of hog fuel utilization, the matter of more efficient furnace design is receiving intensive study. The flat grate furnace has been brought to a high state of perfection so far as quantity of output is concerned, and it is safe to say that this furnace in its present state is abreast of the times in its ability to carry a high sustained output with all classes of fuel. The obligation of efficiency is felt to be fulfilled i a fair CO_2 is produced with smokeless combustion, and further increases in efficiency are generally sought by the use of water cooled furnace walls, air preheaters, etc., with the furnace question considered closed.

The flat grate type of dutch oven furnace has one noticeable disadvantage. Steam from the moist fuel comprises quite a respectable percentage of the gases originating in the furnace. This gas is about 50 per cent lighter than the other gases being generated, with the exception of methane, and will quickly leave the furnace if means of exit are provided. Since it has the capacity to absorb about twice as much heat as have the gases of combustion, its presence in the furnace is decidedly detrimental. However, it is necessary to obtain a thorough mixture of volatile combustibles and air, which is accomplished by the use of the drop arch. This arch prevents the escape of the H_2O vapors and results in mixing them quite thoroughly with the burning gases, with the probable result of lowering the furnace temperature. Clearly if some means were provided to permit this water vapor to escape without passing into and mixing so thoroughly with the gases through the zone of combustion.

a more efficient furnace action should result. In view of this, it may not be amiss therefore to direct your attention briefly to some of the methods being employed to burn wood waste in other countries, where this natural resource is instinctively regarded as a commodity of value, and to indicate what results are being obtained locally from the application of these principles.

European Practice

Modern European practice in burning wood waste is principally based on the recognized fact that the combustible matter of wood is for the most part volatile and will burn as a gas. For that reason the best known of these furnaces have their design based on their action as a gas producer as much as that of a combustion furnace. Typical examples of these are the Bergmans furnace in Germany and the Malm furnace in Sweden. Both of these furnaces are spoken of as "half gas" furnaces, indicating the principle underlying their operation. These in their design stress the principle of furnace operation stated above, viz—that the combustion of a highly volatile solid fuel is not a single process, but is divided into (1), preliminary drying, (2), gasification of the volatile matter, and (3), combustion of the fixed carbon and generated gases. The chief point of difference from the ordinary flat grate furnace is that some or all of the above processes are carried out in separate zones at temperatures most suitable for them, in order to make conditions as favorable as possible for obtaining the best results. In some of these furnaces, means are also provided for the escape of the water vapor. The lowest temperatures are found at the fuel inlets, where the moisture is driven off. In the second stage the temperature is higher and the volatile hydrocarbons are volatilized. In the last stage the fixed carbon and volatile gases burn.

Fig. 3 shows a cross section of the Bergmans "Half Gas" furnace, in which the three divisions of fuel burning are definitely divided. The upper portion is the drying and primary distillation zone. In the second chamber the combustible gases are burned with the aid of secondary air, and in the third and lowest zone the combustion of the fixed carbon and the heavier volatiles is completed. Zoned air admission is provided under the grates, the pressure being varied for each division of the furnace. This represents, so far as the author knows, the extreme development of zoned combustion of volatile fuels. An efficiency of over 75 per cent is claimed for boiler, furnace and super-heater, when using fuel of 43 per cent moisture, 0.6 per cent ash, and a fuel value of 5470 b.t.u. as fired. Note this furnace provides definite means for the escape of water vapor without its mixing with the burning gases.

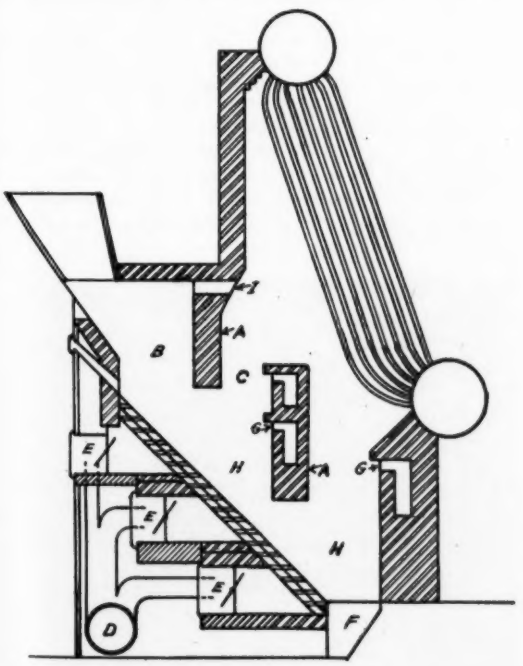


FIG. 3

Bergmans "half gas" furnace. A-A—Separating walls. B—Charging and drying chamber. C—Gas combustion passage. D—Primary air duct. E-E—Primary air chambers. F—Ash pit. G-G—Secondary air inlets. H-H—Gasification zones. I—Moisture and Gas Exhaust passage.

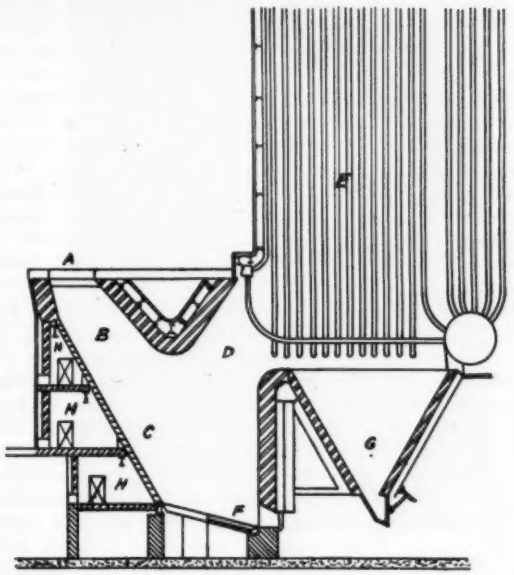


FIG. 4

Malm "half gas" furnace. A—Fuel inlet. B—Drying zone. C—Gasification zone. D—Gas inlet to combustion chamber. E—Water cooled combustion chamber and coal furnace. F—Wood ash grates. G—Coal ash hopper. H—Primary air inlets.

A design of the Malm "Half Gas" furnace, shown in Fig. 4, approaches more nearly the designs that have been developed locally. The zoning is not sharply defined, being merely theoretical divisions of a single combustion chamber, although their functions are separately conducted, and not intermingled as in the flat grate furnace. This is a combination furnace, in that pulverized coal is also used, being burned in a separate combustion chamber, into which most of the gases from the wood furnace are led and burned. This particular furnace serves a pulp mill of approximately 400 tons daily output, where the refuse from the wood mill constitutes the principle source of wood fuel. As is the case with pulp mills, this waste did not supply sufficient fuel for full steam requirements, and advantage was taken of available low priced-coal to make up the fuel deficiency. For this reason its design may be of interest to other mills operating under like conditions, where cheap coal is available. Particular requirements to be met in the design of this furnace were: First, the furnace must be capable of carrying the full specified boiler load with either fuel alone or in combination; second, the wood grates must be protected from overheating when coal is burned; and third, the ash from the coal must not fall on the wood grates or the wood fire.

The wood furnace has an inclined grate area of 186 square feet and a horizontal grate area of 41 square feet. A full load output of 55,000 pounds of steam per hour is obtained with wood having 55 per cent moisture, and 80,000 pounds per hour with 40 per cent moisture in the fuel. The combustible gases are carried out of the furnace into the main combustion chamber and burned in combination with secondary air introduced there. With this method 17 per cent CO_2 and no CO are produced. The inclined grates are water cooled, the water supply being zoned and hand controlled, so that the grates in the hottest part of the furnace receive the most water. The primary air is also zoned, as shown in the sketch. Note that the radiating arch covers only the drying and preliminary distillation zone, the water vapor passing directly into the secondary chamber. This separation is not as complete as in the Bergmans furnace, but more complete than in the flat grate furnace with the drop arch.

Several interesting features in the operation of this furnace are recorded. When burning fairly dry wood (about 20 per cent moisture) but 2 or 3 per cent of the combustion air is introduced under the grates, practically all of the combustion taking place in the secondary water cooled chamber. When burning wet wood this air proportion under the grates must be increased. It was also found that water cooling of the grates was absolutely necessary with wet fuel, but was not required with dry fuel; local spots of extremely high temperature being formed when wet fuel was burned. It was found possible to so regulate the air supply that almost no free oxygen was found in the flue gases. Wood waste with 60 per cent moisture has been successfully burned. Those wishing additional data on this installation are referred to the January, 1934, issue of "Combustion."

West Coast Installations

The foregoing types of inclined grate furnace illustrate applications of the principles of hog fuel combustion which are being also applied in like manner to some extent in local practice. One of the first successful installations of the inclined grate dutch oven furnace was at the plant of the Everett Pulp and Paper Company, which gave satisfactory service. Owing to a lack of understanding of the principles underlying this type of furnace, several others were installed which were little more than tilted flat grate furnaces. Naturally they did not evidence any particular improvement in operation, and since they were more expensive to build they did not become popular. Other installations were made where the class of fuel was not suitable for the furnace. A number of these installations were later taken out. These instances are cited to point out the fact, mentioned in the opening paragraphs above, that modern hog fuel burning equipment must be an engineered product based specifically on the characteristics of the fuel, and not on an offhand adaptation of something similar. This is further illustrated by the fact that more carefully engineered designs of the inclined grate furnace have again proven this type of furnace to be satisfactory. Important examples of these are the furnaces at the Camas plant of the Crown Willamette Paper Company, and at the Coos Bay plant of the Mountain States Power Company at Marshfield, Ore.

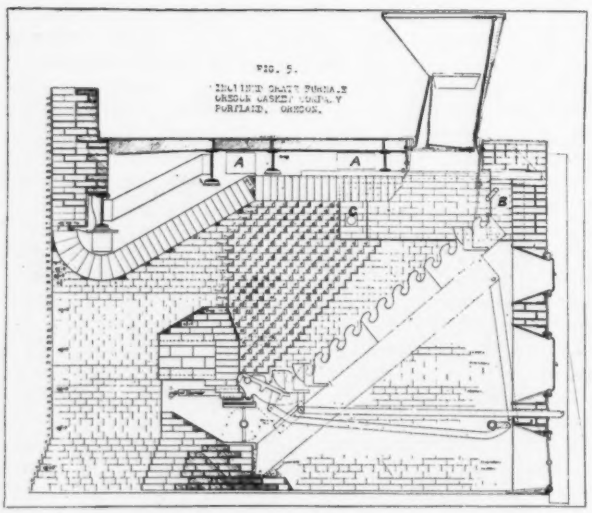


FIG. 5
Inclined grate furnace, Oregon Casket Co., Portland, Ore.

An installation at the plant of the Oregon Casket Company at Portland, Ore., offered an opportunity for directly comparing the flat grate and the inclined grate furnace. This plant was formerly served by a standard type of flat grate furnace. Results were not satisfactory, and the furnace was rebuilt as shown in Fig. 5. The grate bars are mounted on bearer bars inclined at an angle of about 45 deg., and designed so that each row can be rocked separately if necessary, to move the fuel and get rid of the ash and clinker. The furnace throat is of special design to provide a venturi action to the escaping gases, which burn beyond the bridge wall in the combustion chamber. Primary air is drawn from over the arch through ports "A-A" and down through ducts built into the side furnace walls to openings under the grates (not shown). Secondary air is admitted through adjustable dampers at "B" and thence through horizontal side wall ducts to openings "C" over the fire. Secondary air may also be admitted through a damper controlled opening under the bridge wall to the combustion chamber. This furnace produces a particularly hot fire with almost non-luminous flame in the combustion chamber.

In order to determine just what benefits the new furnace would give, tests were run before and after the change was made, with the following results:—

Keeler water tube boiler—1395 sq. ft.
Mixed dry shavings and wet fir hog fuel

	Before	After
Duration of test	3 hours	3 hours
Average steam pressure	100 lbs.	106 lbs.
Pounds of steam per hour	5873	8517
Average feed water temperature	150 deg.	110 deg.
Pounds of fuel per hour	1815	1887
Boiler horsepower developed	187.2	281.8
Percentage of rated capacity developed	134%	200%
Moisture in fuel	13%	9.4%
B.t.u. in fuel as fired	7760	8070
Water evaporated per lb. of fuel as fired f. and a. 212 deg.	3.56	5.15
Flue gas analysis		
CO_2	7.8%	16.4%
O_2	11.86%	3.4%
CO	1.26%	0.1%
Draft at damper	0.5%	0.5%
Efficiency of boiler and furnace	44.5%	67.3%

At another plant, the Portland Woolen Mills, Portland, a furnace of this type is in operation. Tests of the furnace showed the following results, using a mixture of spruce and fir hog fuel, with 29 per cent moisture.

Duration of test	5½ hours
Pounds of fuel per hour	4,033
Water evaporated per hour f. and a. 212 deg.	13,473
Heating value of fuel as fired	6,100 B.t.u.
Boiler horsepower developed	545
Flue gas analysis	
CO_2	15%
O_2	3.7%
CO	0.0%
Stack temperature	480 deg.
Stack draft	0.2%
Efficiency of boiler and furnace	65.2%

These results are given to indicate that a properly designed inclined grate furnace provides an efficient means of burning hog fuel. Other users have found that this

type of furnace lends itself well to instrument control of combustion, an operation for which the flat grate furnace is not so well adapted. The Camas plant of the Crown Willamette Paper Company offers a good example of controlled combustion with hog fuel. Figs. 6 and 7 show views of the firing deck and boiler instrument panel for this plant, showing that a hog fuel furnace can be designed and operated at the same high grade as that for other fuels.

The problem of combustion control is becoming increasingly important as the advance to higher efficiencies goes on. With the flat grade furnace about all that can be done to increase ratings is to open the doors over the fire and increase the air inflow until the smoke stops. It is to the credit of the furnace that this operation is generally accompanied by an increase in output and a fair percentage of CO_2. However, positive and graduated control is not always obtained, and the operator accepts whatever efficiency that happens to result therefrom, when he has gotten the rating he wants. A balanced furnace draft under these conditions is unattainable, and automatic furnace regulations equally difficult.

Experience with inclined grate furnaces has indicated that better combustion control can be obtained with lower draft velocities and less excess air than is the case with the flat grate furnaces. The Malm furnace described above, and the operating data on the Portland Woolen Mill furnace, illustrate the facility with which good ratings and efficiencies can be obtained with low draft pressures and positive draft control. Generally the efficiency drops because of the increase in the draft pressure and velocity and there results a more or less definite relation between the rate of increase of combustion and the rate of increase in the draft. The point to be noted is that rate of combustion can be increased more rapidly in relation to the draft with the inclined grate furnace than with the flat grate furnace. This also provides more favorable conditions for smoke control.

Draft Pressures

In California, some investigations are being conducted on the effect of reduced draft pressures on furnace efficiencies. It has been found that in some cases where comparatively dry fuel is being burned, an original stack draft of 1 inch can be reduced to 0.35 inch without affecting the capacity of the furnace, and the efficiency has been improved. The engineers state that these results are being obtained through positive and complete control of the furnace draft and temperatures, and by allowing the generated furnace gases to push themselves out of the furnace instead of being pulled out by the stack draft. This control is being obtained with a sloping grate furnace.

FIG. 6
Operating deck, inclined grate furnaces, Crown Willamette Paper Co., Camas, Wash.

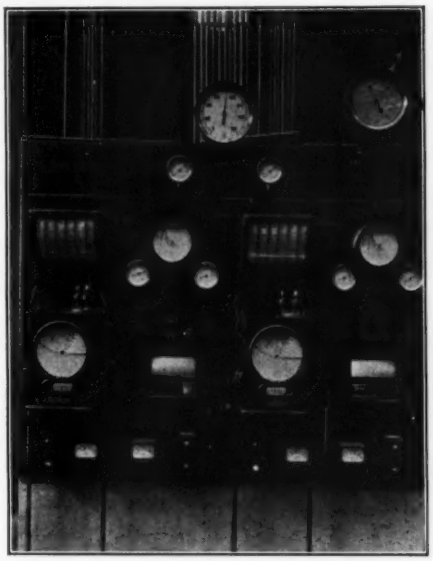


FIG. 7
Boiler operating panel, Crown Willamette Paper Co., Camas, Wash.

These plants make use of a novel draft regulator which, like the present inclined grate furnaces, is an old idea originally used with but little success, but rendered successful through more correct understanding and better engineered application of its operating characteristics. Fig. 8 shows a typical cross section of this device, which is installed near the top of existing stacks. The return bend discharges the gases downward against the surface of water carried in a conical tank, the operator controlling the draft by raising and lowering this water level from the furnace room floor. This device is in use on several plants burning wood waste, and one is just going in service on a plant in Greenville, Cal., designed to burn wet sugar pine sawdust with a high moisture content. Operating records from one plant using this control with fairly dry fuel show that smoke can be almost instantly controlled with it, and also that after it was installed the improvement in furnace efficiency, due to better draft regulation, enabled the plant to increase its steam output over 25 per cent with the same fuel. It is possible that this controller may contain something of value to plants that want to get the utmost out of their hog fuel.

One of the principal points of differences between flat grate and inclined grate furnaces is in their load carrying ability. The inclined grate furnace does not have the ability to carry extreme overloads that the flat grate furnace does. However, keeping in mind that our developments are affected by a deficiency of the hog fuel supply, it is fairly conclusive that increased efficiency is of more importance than increased capacity. It is clearly unnecessary to design a plant with hog fuel furnaces to give 400 percent rating, when the available hog fuel supply may be sufficient for only 200 percent rating, with the balance of the load to be made up with oil. A better plan would be to build the furnace that would give the greatest possible output under fairly continuous operation, with the fuel available, at the best possible efficiency, rather than one that could operate at 300 percent rating, doing this

part of the time and perhaps 100 percent rating the balance of the time. In other words, where abundant hog fuel is available and high capacity is the thing to be desired, a flat grate furnace may be used; but where the hog fuel is to be made go as far as possible, probably with a fluctuating supply, a more efficient type of furnace should be used that can be more effectively regulated for varying conditions, and it is thought that for this reason the inclined grate furnace, properly engineered, justifies attention.

In modern steam plant economics the air preheater is occupying a place of growing importance. The use of preheated air requires the use of forced draft. The inclined grate furnace lends itself to the use of forced draft more satisfactorily than does the flat grate furnace. Some plants using flat grates have found it necessary to go to rather complicated and expensive air duct construction to deliver the air where it is needed, which is over the fire. The inclined grate furnace does not require any material alteration in its design to adapt it to forced draft. In fact, some European authorities, where wood fired gas producers are in frequent use, state the inclined grate producer will work satisfactorily only with forced draft. (Groume-Grjimailo; "The Flow of gases in Furnaces." P. 22.)

The question has often arisen whether or not hog fuel can be burned successfully and economically on a mechanical stoker. This has been given much study and although no actual installations of stokers primarily for hog fuel have been made, the results of the study to date may be of interest.

It is the concensus of opinion of those considering the problem that a traveling grate stoker is the most practical machine for burning hog fuel. A new type of traveling grate stoker furnace has recently been developed and used successfully in a number of installations for burning fuels of low heating value and with high volatile and moisture content (over 40 per cent moisture,) and the designing engineers are practically unanimous in their opinion that it will function practically as well with hog

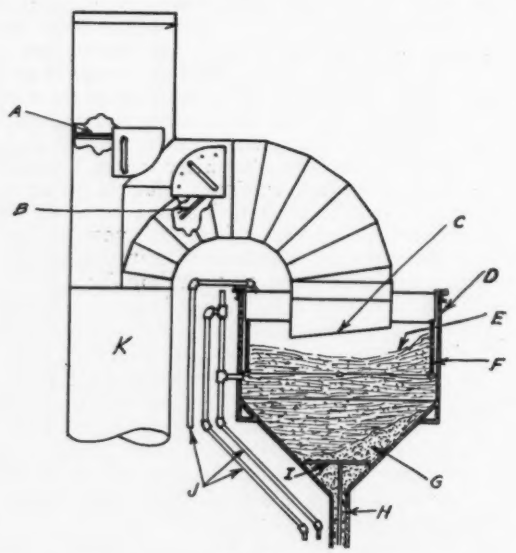


FIG. 8

Draft control apparatus for natural draft. A—Close fitting damper. B—Loose fitting deflection damper. C—Sloping nozzle exit directs flow of escaping gases. D—Collector tank. E—Water surface when controller is in full operation. F—Inner splash band. G—Deposited cinders and fly ash. H—Drain pipe. I—Agitator pipe to loosen cinders when drained. J—Filler and water level control pipe. K—Main stack.

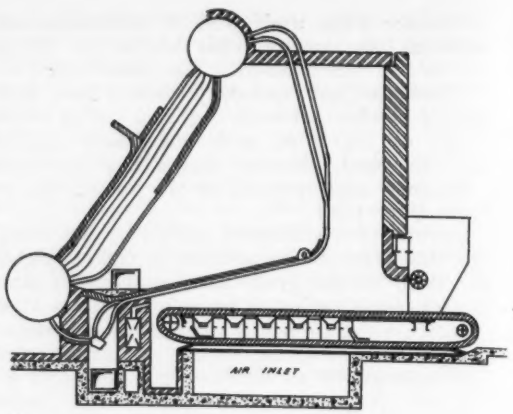


FIG. 9

Hog fuel furnace using chain grate stoker.

fuel. One reason for this opinion is that the fuel in question, low grade lignite, was formerly burned on flat grates in a dutch oven, and the results obtained were in line with those produced by hog fuel in a similar furnace. This action, and that of the new furnace described below, give weight to the opinion that the furnace would function satisfactorily with hog fuel.

New Furnace

The furnace in question is shown in Fig. 9. It will at once be noted that the arrangement of the furnace radically reverses the manner of applying the principles outlined above for economical dutch oven furnaces, but a little study will show that its principles closely parallel those of the former furnaces. Here the fuel passes through a comparatively short preliminary drying zone, the moisture passing forthwith up the front of the combustion chamber while the fuel is carried on under the long extended rear arch by the motion of the stoker. This furnace provides a fairly effective separation of the essential functions of a hog fuel furnace; viz,—drying, distillation, and combustion, with the added advantage that the products of these functions are not mixed to their detriment until completion of combustion.

This furnace would employ a combination of the air control methods of both types of furnace, in that it would be equipped with the zoned air control of the inclined grate furnace, and, as in the case of the flat grate furnace, a considerable portion of the air would be admitted over the fire at the rear of the stoker. The long rear arch, although it performs in a measure the same function as the dutch oven arch, in that it promotes combustion by reflecting and radiating heat to the fuel, is low enough to push the air with the flame and hot gases against the fresh incoming fuel, and radiation from the arch becomes of secondary importance. This permits the arch to be water cooled and so adds to its life. The arch in fact acts as a baffle to direct the flame from the rear portion, where the fixed carbon is burning, forward over nearly the entire length of the fuel bed, and insuring complete mixing and ignition of the volatile gases. The moisture, being largely out of the way, does not inhibit the process of combustion.

One feature of the furnace that justifies special mention is that it is capable of picking up overloads faster than the inclined grate furnace. When stepping up from low ratings to high ratings the arch of a dutch oven may not heat up fast enough to meet the required rate of increase in ignition temperature. To offset this, the air

flow is increased at a faster rate than necessary, and the efficiency drops and smoke increases. With the type of furnace pictured here, the hot gases and flame increase immediately and by this action the pick-up in ignition speed is more readily obtained. The fact that the moveable grate can be speeded up with the load demand to carry more fuel into the furnace overcomes another disadvantage possessed by the inclined grate furnace; which is that its capacity for fuel storage is limited, and from which arises its inability to carry heavy loads or meet sudden load demands.

Another advantage of this furnace is that any light fuel particles dislodged by the draft are carried forward and deposited again on the fuel bed. In practically all dutch oven furnaces the fuel carry-over by the force of the draft is a problem not always easy to solve, and the numerous attempts to introduce secondary air into the combustion chamber to burn this dislodged fuel testify to the importance of this problem. The traveling grate furnace with the long rear arch eliminates this difficulty. It is thought that this furnace is sufficiently important to hog fuel users to bring it to your attention, in view of the frequency with which the question is raised as to whether or not hog fuel can be burned on stokers.

The subject of fuel carry-over naturally brings up another subject of considerable importance to pulp and paper mill operators, that of cinder elimination. There are three recognized methods of cinder elimination in use on the Pacific Coast area:—(1), the commonly known cyclone cinder collector; (2), the more expensive cinder washer, and; (3), the trap shown in Fig. 8. The cyclone collector is quite effective, but it requires the use of an induced draft fan, which, by the high gas velocities it sets up, often draws from the furnace the cinders it entraps in the collector. However, it is comparatively inexpensive to install and where mechanical draft is to be used anyway, say with an air preheater installation, it is probably the most satisfactory cinder collector available.

The cinder washer is built like a modified air washer, and while it is quite effective, in that it not only traps the cinders but also eliminates most of the smoke, it also requires mechanical draft and is more expensive to operate if the water must be pumped. A cinder washer has been in satisfactory service for some years at the plant of the Oregon Pulp and Paper Company at Salem, Oregon.

The return bend collector, Fig. 8, is the only collector known to the author that operates with natural draft. This collector, unlike the others, cuts down the carry-over from the furnace by reducing the furnace draft velocity a small amount. It is in service at several plants in California, but none have so far been installed in the Pacific Northwest.

The problem of cinder elimination may be said to be solved by the three methods cited above, and no mill need put up with the problem of cinder spots in the sheet. Even where oil fuel is used these collectors may be used effectively. The Coos Bay plant of the Mountain States Power Company states it finds the cyclone collector useful when oil fires are being regulated, since it traps the light feathery soot that sometimes escapes from the furnace.

Owing to the great bulk of hog fuel in proportion to its heating value, about ten times that of a good grade of coal, the radius of economic transportation by water is greater than by any other means. For this reason, most hog fuel transportation is done by barges, carrying 150 to 250 units each, and the problem of rapid unloading becomes quite important. The swing boom derrick rigged with a clam shell bucket is almost universally used, being operated by a three or four drum hoisting engine. While there has been very little variation in the pattern of hoisting rig used, there have been several innovations recently developed that speed up the fuel handling to an important degree.

Bucket of Steel Tubing

The Portland General Electric Company, some years ago, designed and built a bucket of steel tubing, having a two unit capacity. This bucket, Fig. 10, is lighter in weight than an ordinary ¾ unit steel plate clam shell bucket, and will unload a barge of fuel in about one-half the time formerly required with the smaller bucket. The operators state that the maintenance on the bucket lines has been reduced about one-half since they started using this bucket, and damage to the barge fences has been virtually eliminated; since the bucket, being lighter, does not strike the fence so hard when swinging into place to pick up a load. The illustration gives a good idea of its construction. It is of all-welded construction, with renewable wearing shoes on the rake teeth. These shoes also protect the deck of the barge from damage from the sharp tooth ends. Contrary to first impressions, this bucket will operate with but little loss of fuel from "riddling" through the teeth when handling the rather coarse fuel produced in the Columbia River region. It would, however, obviously require modification for handling straight sawdust or fine chips. A disadvantage of the bucket is that it does not clean the bottom of the barge as well as a steel plate bucket.

One of the most serious sources of damage to fuel barges is the heavy bucket striking the fences when the derrick slews and swings the bucket against them. A 15,000 pound bucket swinging at the end of a long line can and does strike the fence quite a damaging blow. This swing is aggravated by the quick starting and stopping of the steam slewing gear of the derrick.

The Northwestern Electric Company of Portland has overcome this tendency to fence damage by installing a

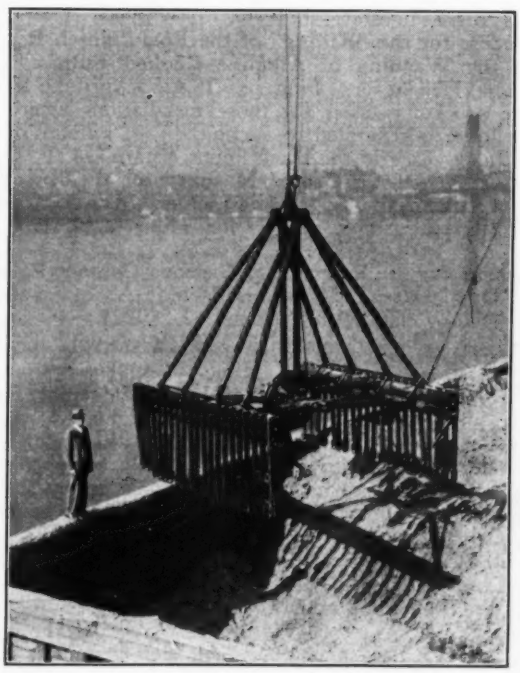


FIG. 10
Fuel unloading rake, Portland General Electric Co.

hydraulic slewing gear, which they designed and built. This gear is equipped with two cylinders 10 in. diameter by 14 feet long, built of extra heavy steel pipe and mounted vertically under the dock. The slewing lines are fastened to the upper end of each cylinder after passing around the "bull wheel" of the derrick. The pistons operate in opposition to each other—in other words one piston travels down while the other is traveling up. Water pressure to the cylinders, at 100 pounds, is controlled through a three way type of hydraulic valve, of the type used to operate the cylinder of a magazine feed pulp grinder. This valve is mounted at the operating levers of the hoist. Water pressure is obtained from the station fire lines, with a 5 h.p. motor driven pump available as an alternate source of power.

With this gear, the motion of the derrick can be controlled more smoothly and without the jerking start and stop given by a steam rig, and the operator can ease the bucket into place with overswinging. The officials of the company say that their barge fence repairs have been reduced to about one-third that of previous costs, and the slewing lines now last over a year, due to the absence of operating shock, where formerly they had to be renewed about once a month. The unloading operation has also been speeded up, due to the fact that the operator can "spot" the bucket more easily. An additional safety feature of this rig is the use of automatic stops clamped on the bull wheel. These are adjustable, and can be placed to cut off the pressure from the cylinders and stop the swing, in case the operator fails to control it manually.

The two unloading devices described above are important reasons why a 200 unit barge of hog fuel can now be unloaded in a little over two hours, where formerly it took six to eight hours. In fact, at both plants mentioned, the limiting factor in fuel unloading is the capacity of the receiving conveyors, which cannot keep up with the unloading rigs.

The foregoing presentation, while not exhaustive, is intended to bring to your attention some of the economic trends in the use of hog fuel, and to point out the probable direction in which future evolution will advance. It is believed that we have clearly established the fact that hog fuel is rapidly becoming a factor of importance in steam production in its own light and not by sufferance.

Pulp and Paper Industry Literature Review

Abstracts of Articles and Patents Compiled by the Abstracts and Bibliography Committee of the Technical Association of the Pulp and Paper Industry, A. Papineau-Couture, John F. Ohlson, C. E. Peterson and Clarence J. West, Chairman

Copies of United States Patents can be obtained from the United States Patent Office, Washington, D. C., for 10 cents each. Send currency, not stamps.

Alkaline Process

Process for the Manufacture of Sulphate Pulp. E. Morterud, Oslo. Finn. pat. 15,550 (Dec. 28, 1931).—Beside the usual cooking liquor an additional liquor is added to the digester.—J. F. O.

Process for the "Killing" of the Foam which Results from the Washing of Alkaline Cooked Pulp. Einar Nystrom, Helsingfors. Finn. pat. 15,425 (April 29, 1932).—The process is used for those installations where the black liquor is separated by suction. The "killing" of the foam takes place in the black liquor cistern.—J. F. O.

Device on Water Cooled Masonry for the Introduction of Air to the Soda Smelt Oven. H. N. Unden, Sprangsviken. Swed. pat. 79,465 (March 10, 1931).—J. F. O.

Process for the Removal of Gaseous Contact Poisons from Oven Gases. Metallgesellschaft A.G., Frankfurt a.M. Swed. pat. 79,482 (June 17, 1929).—A scruber tower is packed with materials which react with the contact poisons.—J. F. O.

Process for the Recovery of High Molecular Fatty Acids from Pine Oil. I. G. Farbenindustrie A. G., Frankfurt a.M. Nor. pat. 53,417 (Oct. 14, 1932).—The acids contained in pine oil are practically completely esterified with the bi- or multi-valent alcohols, and the esterified product is subjected to a splitting off by the Twitchell or the autoclave process whereby only the fatty acid ester is split off. The fatty acid is separated from the resin acid esters and alcohols in the usual manner.—J. F. O.

Lignin Dispersion and Process of Making Same. Guy C. Howard and Carlyle Harmon. U. S. pat. 1,958,624 (May 15, 1934).—An aqueous dispersion containing a salt of lignin-sulphonic acid substantially free from non-ligneous organic matter and particularly suitable as a tanning extract, is produced by precipitating calcium lignin-sulphonate from calcium-base sulphite waste liquor by means of lime, treating the precipitate at about 70 deg. to 90 deg. C. with an aqueous solution of calcium bisulphite at a pH of 4.0 to 5.0, cooling, adding a sufficient amount sulphuric acid to decompose the inorganic bisulphite and of dilute sulphuric acid to decompose the inorganic bisulphite and monosulphite present while leaving enough base in the solution to form a salt with all or part of the lignin-sulphonic acid component. The precipitate is removed by decantation or filtration and the sulphur dioxide by evaporation, preferably under vacuum and at not over 100 deg. C.—A. P.-C.

Recovery of Ammonia from Spent Liquor from the Ammonium Bisulphite Cooking Process. Roger W. Richardson, assignor to E. I. du Pont de Nemours & Co. U. S. pat. 1,943,345 (Jan. 16, 1934).—The hot spent liquor is made alkaline and, while still hot, is brought into intimate contact with air, the resulting gas is cooled, part of the condensable ammonia is absorbed in the condensed liquid thus obtained, and the remaining uncondensed ammonia is recovered by subsequent scrubbing.—A. P.-C.

Elimination of Obnoxious Gases in the Sulphate Pulping Process. W. O. Gordon and E. E. Creitz. Ind. Eng. Chem. 26: 565-567 (May, 1934).—The organic sulphur compounds formed in the sulphate process can be destroyed by treatment with chlorine. It is believed impractical to attempt to destroy all the mercaptans in this way and other means are suggested for eliminating these obnoxious odors.—A. P.-C.

Recovery of Acetic and Oxalic Acids from Soda Black Liquor. Ralph H. McKee. U. S. pat. 1,958,439 (May 15, 1934).—Crude caustic potash, either solid or in solution, is mixed with soda black liquor that has been concentrated to a 50 to 60 per cent total solids content, and the mixture is heated with stirring for about 3 hours at 200 deg. to 230 deg. C., which converts about 85 per cent of the organic matter content of the black liquor into oxalic

acid and about 12 per cent into acetic acid. The melt is dissolved in hot water, cooled and the crystallized sodium oxalate filtered, washed and treated with milk of lime to obtain calcium oxalate and caustic soda solution. The filtrate from the sodium oxalate is treated with crude oxalic acid, heated, cooled, and the potassium acid oxalate which crystallizes out is filtered and treated with milk of lime to obtain calcium oxalate and caustic potash solution. The filtrate from the potassium acid oxalate is distilled to recover the acetic acid. The original melt may be treated directly with milk of lime to precipitate calcium oxalate, the filtrate consisting of a solution of caustic soda and potash which may be used for cooking wood.—A. P.-C.

Sulphite Process

Resin Difficulties and Steps for Their Removal in the Manufacture of Pulp. G. N. Konopatzkii. Leningrad. Oblastnoe Nauch. Inzhenerno-Tekh. Obshchestva Tzellyulozno-Bumazhnoi Prom., New Problems in Cellulose-Paper Production, 1933: 5-33; C. A. 28: 3896.—The contamination of sulphite cooking liquor with easily liquefiable solvents of the natural resins and oils of wood and the phenomena of "injurious resinification" are closely related. The main cause of this resinification is the effect of organic solvents (turpentine, cymens) on the true resins and oils of wood. This effect consists of the solution and deposition of both groups of these compounds, along with other substances, on the fiber surfaces in the form of sticky, oily resinous material. The point of origin of this "injurious resinification" is, therefore, in the digester. The green, terpene-rich wood should be steamed or dried to remove the terpenes. The cymene (in the relief liquor) should be kept out of the cooking liquor. Careful washing of the pulp with water or alkaline solutions is necessary to remove the resin difficulties. The method of cooking, sufficient liquor, good circulation, pressure in the digester at blowing, etc., may play important roles in the resinification phenomena.—C. J. W.

The Sulphonation of Spruce Wood. E. Hagglund and T. Johnson. Finnish Paper and Timber J. 16, No. 7: 282, 284, 286, 288 (Apr. 12, 1934).—The rate of sulphonation of lignin depends to a great extent upon the acidity of the sulphite liquor. The higher the hydrogen ion concentration, the faster the lignin will combine firmly with the sulphur, although this reaction is not limited to an acid sulphite solution. Even at a hydrogen ion concentration of approximately 12, the residues still contain firmly bound sulphur but the rate of the reaction decreases appreciably under these conditions. During the first stages of the sulphonation process, a sulphonic acid of one sulphur per 40 carbons is formed very rapidly; the further sulphonation of one sulphur per 20 carbons proceeds much more slowly, while probably a rearrangement of the lignin molecule takes place. The smallest sulphur consumption during the sulphite cooking process corresponds theoretically to a lignosulphonic acid with one sulphur per 40 carbons. No carboxyl groups could be detected in the lignosulphonic acid.—C. J. W.

Chemical Composition of Spruce Wood and the Reactions Between Wood Components and Cooking Acid in the Sulphite Process. E. Hägglund. Finnish Paper and Timber J. 16, No. 8: 383-384, 386-388, 390-391 (Apr. 30, 1934).—Essentially a theory of the author's theories on the chemical composition of wood, the reactions which are caused by the different constituents, especially the formation of lignosulphonic acids and the important role which the hydrogen ion concentration plays in the cooking process.—C. J. W.

Sulphite Pulping with the Vacuum Saturation. G. N. Konopatzkii. Leningrad. Oblastnoe Sovet Nauch. Inzhenerno-Tekh. Obshchestva Tzellyulozno-Bumazhnoi Prom., New Problems of Cellulose-Paper Production, 1933:87-100; C. A. 28:3897.—Laboratory experiments showed that by charging sulphite liquor into the digester after a prior evacuation of the same with steam, the soaking and maceration at 100-10 deg. of the chips became superfluous with the resulting economy of 2-3 hours for each cooking. A three per cent acid produced pulp with satisfactory chemical and mechanical properties.—C. J. W.

Chemical Control of Sulphite Cooking. O. K. Giller. Bumazhnaya Prom. 12, No. 12: 33-35 (1933); C. A. 28: 3897.—The method of determining the free and combined sulphur dioxide in sulphite liquor at the advanced stages of cooking is based on the determination of combined and total sulphur dioxide and calculating the free sulphur dioxide. The combined sulphur dioxide is determined by heating the liquor until free sulphur dioxide and the sulphur dioxide from calcium acid sulphite are expelled and titrating the resulting calcium sulphite with iodine.—C. J. W.

The Formation of Cymene During the Sulphite Cook. O. Routala and A. Pohjola. Finnish Paper and Timber J. 16, No. 7: 289-290, 292-294, 296 (Apr. 12, 1934).—Sulphur and sulphite cooking acids alone without wood chips are not capable of converting pinene into cymene. The oil of turpentine is converted into cymene through the acid reaction of sulphur dioxide and sulphuric acid and through the oxidizing effect of the sulphur dioxide and sulphur. The course of the reaction is pinene—terpineol—turpentine—cymene. The oxidizing effect of the sulphur dioxide can be expressed in the following manner: $2C_{10}H_{16} + 2HSO_3' = 2C_{10}H_{14} + S_2O_3'' + 3H_2O$.—C. J. W.

Influence of the Quality of Wood on the Yield and Quality of Sulphite and Sulphate Pulp. I. Investigation of spruce wood. Erik Hagglund, O. Sandelin, C. Nyman, T. Eriksson and H. v. Koskull. Svensk Pappers-Tid. 37:133-139, 164-167, 196-202 (1934); C. A. 28:3894. —The density of unshrunk pine wood is approximately 0.39-0.42. The amount of autumn wood in rapidly grown woods varied from 5 to 15 per cent of the total amount of wood. The fibers of rapidly grown woods are short (about 2.25 mm.) and broad (about 10.05 mm.); in other woods the width is fairly constant at 0.04 mm. but the length varied from tree to tree between 3 and 3.8 mm. The ether-extract residue varied considerably (5.5-7 per cent) and the acetone extract was negligible. The lignin content is fairly constant in wood from the same tree but varies from tree to tree. The ash is fairly constant at 0.2-0.3 per cent for different pines. The pentosan content increases from the bottom to the top of the tree. The acetic acid content varies from 1.65 to 2.15 per cent of the weight of the wood. The results of the sulphite and sulphate cellulose digestions are given in tables and graphs. —C. J. W.

Sulphite Pulping Process. Otto Kreissler assignor to American Lurgi Corp. U. S. pat. 1,942,760 (Jan. 9, 1934).—Before cooking begins, the digester is charged with an amount of liquor which is smaller than the usual amount by the amount that would otherwise have to be removed by relieving and blowing-off, without reducing the amount of wood charged into the digester, and the wood above the level of the liquor is irrigated with cooking liquor by means of a circulating apparatus, and cooking is otherwise effected in the usual manner.—A. P.-C.

Sulphite Pulp Digester System. Andreas Christensen assignor to Fibre Making Processes, Inc. U. S. pat. 1,942,685 (Jan. 9, 1934).—Liquor is pumped from the top of the digester, forced downwardly through a vertical heater, and re-introduced at the bottom of the digester.—A. P.-C.

Manufacture of Wood Pulp. Aimwell G. MacIntyre assignor to A. E. Staley Manufacturing Co. U. S. pat. 1,945,862 (Feb. 6, 1934).—Digestion of wood in a liquor such as an acid or alkaline solution is effected in the presence of a dispersing colloid other than that contained in the wood, such as a starch conversion gum.—A.P.-C.

Apparatus for Treating Fibrous Material. Sidney D. Wells. U. S. pat. 1,949,669 (March 6, 1934).—The invention provides an apparatus for feeding cooking liquor into the digester at a definite regulatable rate, either continuously or intermittently, during the cook. The feed may be obtained by means of a piston pump, the speed of which is constant and the stroke of which can be adjusted. —A. P.-C.

Sulphite Waste Liquors

Making Bakers' Yeast from Sulphite Liquor. L. N. Gurfein and V. Ya. Chastukhin. Izvestiya Tzentral. Nauch.-Issledovatel. Inst. Pishchevoi Vkusovoi Prom., No. 9, 1933. 35 p. C. A. 28:1412.—Sulphite liquor, if neutralized and enriched with nutrients yielding nitrogen and phosphorus, is an excellent medium for cultivation of bakers' yeast. Heating for one hour with steam after neutralization increases the sugar content; excessive heating destroys the sugar. The optimum density of the liquor is 1.050-1.060; higher concentrations introduce plasmolytic effects. Yields depends on degree of aeration and may be 40-100 per cent of the sugar. The yeast which is produced has a relatively high dry matter content, namely, 29.6 per cent. Yeast production is one of the most profitable means for biochemical utilization of sulphite liquor.—C. J. W.

Spent Sulphite Liquor, its Toxic Effect and Disposal. Vogel. Reichsarbeitsblatt, 1933, III:265-269; C. A. 28: 1440.—Because of its toxicity for fish and water plants and animals, spent sulphite liquors should not be returned to rivers. They may be concentrated by evaporation and, by the addition of a cementing substance, may be briquetted. The concentrated liquor may also be used to sprinkle streets to lay the dust. It is likewise useful as a tanning material. —C. J. W.

Tanning Action of Sulphite-Cellulose Extract. Wilhelm Vogal. Collegium 1933:524-531; C. A. 28:2565.—Sulphite cellulose has a tanning action but is of commercial value only in mixtures containing less than one-third of it. Sole leather tanned with sulphite cellulose has a degree of tonnage of only 35-40, upper leather of 40-55.—C. J. W.

Method of and Apparatus for Producing Chemical Pulp. Antonin Lemberger and Lubomir Lemberger. U. S. pat. 1,954,012 (April 10, 1934).—The patent covers an apparatus for the continuous digestion of a fibrous raw material in a series of digesting chambers connected in series alternately at the top and bottom. It provides means for withdrawing and adding liquor at various stages in the passing of the material from one digester to the next so that it may be partially freed from spent liquor and treated with fresh liquor of the same or different strength or composition.—A. P.-C.

Treatment of Sulphite Pulp and Liquor. Thomas L. Dunbar. U. S. pat. 1,955,057 (April 17, 1934).—A screen is provided in the bottom cone of the digester through which the liquor can be drawn off at the end of the cook and passed through a heat exchanger to warm up the water used for washing the pulp or subjected to suitable treatment for recovering the residual sulphur dioxide.—A.P.-C.

Pulping of Manilla, Sisal, or Like Raw Fibrous Materials. George A. Richter assignor to Brown Co., U. S. pat. 1,954,226 (April 10, 1934).—The material is cooked in a substantially neutral solution of sodium sulphite of less than about 2 per cent strength, and then in an alkaline solution of a strength of about 2 per cent caustic soda equivalent. The pulp has a pentosan content not exceeding about 8 per cent.—A. P.-C.

Process for Yeast Culture with Sulphite Waste Liquor as the Principal Raw Material. W. Rosenlew & Co., Bjorneborg. Finn. pat. 15,444 (March 13, 1929). —During the yeast culture, the yeast solution is taken from the fermentation vat, the yeast separated from the solution and wholly or partially replaced in the fermentation tanks. —J. F. O.

Production of Valuable Materials Such as Methanol, Etc., from Vegetable Materials by Digestion and Distillation. Erik L. Rinman. U. S. pat. 1,941,760 (Jan. 2, 1934).—Wood chips or straw are digested in aqueous barium hydroxide solution at an elevated temperature under pressure to effect decomposition and formation of compounds with the barium hydroxide. Barium oxide is added to the resulting solution to effect reaction with the water of the solution and generation of heat, thus driving off water from the solution, and the residue is subjected to dry distillation.—A.P.-C.

Tanning Preparation from Sulphite Waste Liquor. Frederick J. Wallace assignor to Robeson Process Co. U. S. pats. 1,952,642 and 1,952,643 (March 27, 1934). *No. 1,952,642*—Sulphite waste liquor is neutralized with lime to pH of about 7.5, decanted, cooled to about 100 deg. F. and fermented with an organism that ferments pentoses and pentosans as well as hexoses *(e.g., Aerobacillus acetoethylicum, B. macerans, Clostridium acetonigenum, B. butylicus, B. butyricum)*. The fermented liquor is concentrated to about 30 deg. Bé., with or without recovery of volatile by-products. *No. 1,952,643* specifies carrying out the fermentation of the preceding patent with lactic acid producing bacteria such as *Lactobacillus pentoaceticus, Lactobacillus bulgaricus, B. delbruckii, Streptococcus lacticus.*—A.P.-C.

Beating

Pulp Beating Machine. Melvin A. Mills. U. S. pat. 1,955,758 (April 24, 1934).—In beaters with two or more rolls mounted fairly close to one another, the hood over the rolls is designed so as to prevent lodging of pulp in the passage between adjacent rolls and to produce thorough mixing of the pulp. The portion of the hood between the rolls is arched both parallel and at right angles to the axis of the rolls.—A.P.-C.

Beating Device for Paper Stock. Werner Reisten, Aschaffenburg, Ger. pat. 596,155 (Feb. 28, 1932).—The device consists of a horizontal shaft with discs so spaced that they revolve between stationary discs fastened to a housing.—J.F.O.

Beater. Helmuth Banning, Duren. Ger. pat. 520,-347 (July 11, 1929).—The invention is based on the facts, that the correct use of the kinetic energy in a beater is obtained by having sufficient height for the stock after it is thrown from the roll; to have the highest initial density, and to have the greatest trough content with small diameter of the beater roll. To obtain this, there are two bed plates placed at the back of the beater roll, after which the stock is allowed to be thrown upward and collected above and before the roll.—J.F.O.

Hollander for the Beating of Fibrous Materials for the Manufacture of Paper and Board. Edouard Hery, Paris. Ger. pat. 594,529 (Oct. 5, 1929).—The bed plate is placed at the side of the beater roll, and at the same side that the stock approaches the beater roll. The beater roll travels in the reverse direction of ordinary beaters. The bed plate is supported by a casting which pendulates and in addition to the force caused by its weight, more pressure can be exerted against the beater roll if desired.—J.F.O.

IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING SEPTEMBER 22, 1934

CIGARETTE PAPER

Mitsui & Co., Ltd., Wales, Maru Kobe, 1 cs.; Protecto Products Co., Liberty, Havre, 3 cs.; American Tobacco Co., Pr. Roosevelt, Havre, 250 cs.; De Manduit Paper Corp., Washington, Havre, 146 cs.

WALL PAPER

———, Washington, Havre, 14 cs.; S. K. Lonrgren, Drottningholm, Gothenburg, 3 cs.; Globe Shipping Co., A. Ballin, Hamburg, 4 bls.

PAPER HANGINGS

W. H. S. Lloyd & Co., A Banker, London, 1 cs., 3 bls.

NEWSPRINT

Jay Madden Corp., Scanstates, Wiborg, 297 rolls; Lunham & Reeve, Inc., Scanstates, Wiborg, 187 rolls; ———, Pr. Roosevelt, Hamburg, 108 rolls; Jay Madden Corp., Pr. Roosevelt, Hamburg, 134 rolls; Perkins Goodwin & Co., A. Ballin, Hamburg, 78 rolls.

PRINTING PAPER

International F'd'g Co., Westernland, Antwerp, 2 cs.; Chas. Happel, Columbus, Bremen, 1 cs.; L. A. Consmiller, Columbus, Bremen, 13 cs.

WRAPPING PAPER

Walker Goulard Plehn Co., Scanstates, Helsingfors, 347 rolls; ———, Pr. Roosevelt, Hamburg, 463 bls.; F. C. Strype, E. Francqui, Antwerp, 4 cs.; P. H. Petry & Co., Bitterfeld, Bremen, 5 cs.; Walker Goulard Plehn Co., Washington, Hamburg, 123 bls.

PACKING PAPER

Scharf Bros., Black Heron, Rotterdam, 8 cs.; ———, Columbus, Bremen, 10 cs.; F. C. Strype, A. Ballin, Hamburg, 5 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., A. Banker, London, 16 cs.; Mayer Bros., A. Ballin, Hamburg, 75 bls.

DECALCOMANIAS

Sellers Transportation Co., A. Ballin, Hamburg, 2 cs.; ———, Columbus, Bremen, 1 cs.

TRANSFER PICTURES

Manhattan Decalcomania Co., Bitterfeld, Bremen, 2 cs.

TRANSFER PAPER

Rohner Gehrig & Co., Columbus, Bremen, 6 cs.

SURFACE COATED PAPER

Gevaert Co. of America, Westernland, Antwerp, 36 cs.; Globe Shipping Co., Bitterfeld, Bremen, 5 cs., 5 crates; Chas. Happel, Columbus, Bremen, 7 cs.

METAL COATED PAPER

K. Pauli Co., Bitterfeld, Bremen, 11 cs.

BASIC PAPER

Globe Shipping Co., Bitterfeld, Bremen, 36 cs.

COLORED PAPER

International F'd'g Co., A. Ballin, Hamburg, 4 cs.

COATED PAPER

Chas. Happel, A. Ballin, Hamburg, 6 cs.

BLOTTING PAPER

J. & H. Berge, Carinthia, Southampton, 2 cs.

GUMMED PAPER

———, Columbus, Bremen, 7 cs.

MISCELLANEOUS PAPER

National City Bank, Kwansai Maru, Yokohama, 4 cs.; Favor Ruhl & Co., Westernland, Antwerp, 2 cs.; A. W. Fenton, Inc., Champlain, Havre, 2 cs.; The Borregaard Co., Inc., Drottningholm, Gothenburg, 24 rolls; E. H. Sargent & Co., Drottningholm, Gothenburg, 2 cs.; R. Wilson Paper Corp., Cameronia, Glasgow, 11 cs.

BAGS, BAGGINGS, ETC.

Chase National Bank, Pulaski, Gdynia, 85 bls. rags; ———, Gourko, Aberdeen, 87 bls. bagging; ———, Britannic, Liverpool, 14 bls. paper stock; Chase National Bank, Bitterfeld, Bremen, 79 bls. bagging; J. J. Ryan, Black Heron, Rotterdam, 201 bls. cotton waste; New England Waste Co., Black Heron, Rotterdam, 60 bls. pickers; E. J. Keller Co., Inc., Black Heron, ———, 59 bls. paper stock; E. J. Keller Co., Inc., Excalibur, 52 bls. tares; E. J. Keller Co., Inc., Excalibur, ———, 354 bls. paper stock; ———, Quaker City, Leith, 163 bls. bagging; ———, Quaker City, Dundee, 90 bls. paper stock; E. J. Keller Co., Inc., Southern Prince, ———, 23 bls. paper stock; Mitsui & Co., Ltd., Wales Maru, Shanghai, 450 bls. cotton waste.

CASEIN

D. C. Andrews & Co., A. Ballin, Hamburg, 50 bags.

WOOD PULP

Lagerloef Trading Co., Scanstates, Wiborg, 2600 bls. sulphite, 530 tons; Castle & Overton, Inc., Scanstates, Wiborg, 148 bls. wood pulp, 29 tons; M. Sone, Scanstates, Helsingfors, 300 bls. wood pulp, 50 tons; Guaranty Trust

Co., Maria, Trieste, 200 bls. wood pulp; J. Andersen & Co., Drottningholm, Gothenburg, 750 bls. sulphite; D. M. Hicks, Inc., Drottningholm, Gothenburg, 300 bls. sulphite; Perkins Goodwin & Co., Drottningholm, Gothenburg, 202 bls. sulphate; Gottesman & Co., Inc., Drottningholm, Gothenburg, 1650 bls. sulphate; Bank of N. Y. Trust Co., A. Ballin, Hamburg, 525 bls. wood pulp, 105 tons; Castle & Overton, Inc., A. Ballin, Hamburg, 834 bls. wood pulp, 166 tons; Perkins Goodwin & Co., Kelkheim, Sundsvall, 450 bls. sulphate; Perkins Goodwin & Co., Kelkheim, Sundsvall, 150 bls. sulphite; Pagel Horton & Co., Inc., Kelkheim, Sikea, 150 bls. sulphite; Price & Pierce, Ltd., Kelkheim, Orviken, 1770 bls. chemical pulp, 295 tons; Price & Pierce, Ltd., Kelkheim, Hernosand, 450 bls. sulphite, 75 tons; Price & Pierce, Ltd., Kelkheim, Hernosand, 1500 bls. sulphate, 250 tons; Stora Kopparberg Corp., Kelkheim, Skutskar, 375 bls. wood pulp; Bulkley Dunton & Co., Cliffwood, ———, 6650 bls. wood pulp.

ALBANY IMPORTS

WEEK ENDING SEPTEMBER 22, 1934

Perkins Goodwin & Co., Kelkheim, Sundsvall, 1200 bls. sulphite, 200 tons; Pagel Horton & Co., Inc., Kelkheim, Sikea, 2400 bls. sulphite, 400 tons; Price & Pierce, Ltd., Kelkheim, Orviken, 2400 bls. chemical pulp, 400 tons; ———, Kelheim, Hernosand, 600 bls. sulphite, 100 tons; Bank of N. Y. Trust Co., Kelkheim, Hernosand, 6000 bls. sulphate, 1000 tons; Tradesmans Natl Bank Trust Co., Kelkheim, Norrsundet, 2500 bls. sulphate, 500 tons; ———, Kelkheim, Gefle, 1250 bls. sulphite; Pagel Horton & Co., Inc., Kelkheim, Gefle, 4750 bls. sulphite; Pagel Horton & Co., Inc., Kelkheim, Gefle, 750 bls. sulphate.

BOSTON IMPORTS

WEEK ENDING SEPTEMBER 22, 1934

G. F. Malcolm, Inc., Britannic, Liverpool, 12 cs. tissue paper; F. S. Webster, Britannic, Liverpool, 16 cs. tissue paper; Bulkley Dunton & Co., Cliffwood, ———, 1950 bls. wood pulp.

BALTIMORE IMPORTS

WEEK ENDING SEPTEMBER 22, 1934

Bulkley Dunton & Co., Ditmar Koel, ———, 3125 bales wood pulp; ———, Quaker City, London, 80 coils old rope.

PHILADELPHIA IMPORTS

WEEK ENDING SEPTEMBER 22, 1934

Lagerloef Trading Co., Scanstates, Helsingfors, 768 bls. sulphite, 130 tons; J. W. Hampton, Jr., & Co., Inc., Scanstates, Wiborg, 201 rolls newsprint; J. W. Hampton, Jr., & Co., Inc., Scanstates Wiborg, 34 bls. printing paper; Perkins Goodwin & Co., Scanstates, Gdynia, 1600 bls. wood pulp, 244 tons; Johaneson Wales & Sparre, Inc., Scanstates, Gdynia, 204 bls. wood pulp, 30 tons; Chase National Bank, Quaker City, London, 47 coils old rope; ———, Quaker City, Leith, 120 bls. rags; Bulkley Dunton & Co., Cliffwood, ———, 500 bls. wood pulp.

WILMINGTON IMPORTS

WEEK ENDING SEPTEMBER 22, 1934

Castle & Overton, Inc., Scanstates, Wiborg, 6023 bls. wood pulp, 1204 tons.

CHARLESTON IMPORTS

WEEK ENDING SEPTEMBER 22, 1934

Darmstadt Scott & Courtney, Wales Maru, Osaka, 800 bls. bagging; Chase National Bank, Wales Maru, Osaka, 1600 bls. bagging.

Box Board Production for July

Monthly statistics of Box Board for 94 identical manufacturers compiled from data furnished by the National Paperboard Association from reports of members, and by manufacturers reporting direct to the Bureau of the Census, are presented in the following table.

Rated (24-hour) capacity data of box-board machines in inch-hours in this report are based on last dryer width whereas those shown in reports published for earlier years were based on maximum trim width. The capacity data vary according to the normal number of working days in each month.

Year and Month	Operated (Inch hours) (Based on last dryer width) Rated Capacity	Operated	Per cent of Capacity	Production (tons) Rated Capacity	Output	Per cent of Capacity	New Orders (Tons)	Unfilled Orders (Tons)
1934								
Jan.	14,660,767	8,386,520	57.2	401,900	230,311	57.3	218,169	63,328
Feb.	13,048,031	8,298,684	63.6	351,714	223,366	63.5	234,318	75,143
March	14,995,780	9,454,746	63.0	401,966	254,819	63.4	264,985	86,033
April	13,703,272	8,978,520	65.5	369,881	244,334	66.1	230,754	76,578
May	14,934,038	8,374,420	56.1	403,139	223,478	55.4	225,957	80,958
June	14,658,061	8,355,200	57.0	392,585	224,214	57.1	214,236	72,990
July	13,994,803	7,375,422	52.7	384,143	201,924	52.6	200,278	73,256
Total (7 mos.)	99,994,752	59,223,512	59.2	2,705,328	1,602,446	59.2	1,588,697	.....
1933								
Jan.	14,210,696	7,679,402	54.0	392,770	205,326	52.3	207,214	36,065
Feb.	12,560,626	7,572,068	60.3	350,350	205,871	58.8	207,705	38,505
March	15,472,220	8,758,969	56.6	432,799	237,536	54.9	250,480	53,542
April	13,761,134	8,185,670	59.5	384,846	223,845	58.2	236,022	70,099
May	14,888,820	10,418,818	70.0	417,798	287,032	68.7	294,460	76,719
June	13,695,506	10,432,158	76.2	384,283	292,967	76.2	349,650	144,307
July	12,925,903	10,230,022	79.1	358,378	283,272	79.0	268,546	128,638
Total (7 mos.)	97,514,905	63,277,107	64.9	2,721,224	1,735,849	63.8	1,814,077	.....

Year and Month	Shipments of box board [1]	Stocks of box board end of month [1]	Consumption of waste paper [2] Capacity	Consumed	Per cent of capacity	Stocks of waste paper end of month [2] Total	At plants	In transit and unshipped purchases
	Tons					Tons		
1934								
Jan.	187,557	77,825	310,621	170,763	55.0	204,440	176,761	27,679
Feb.	192,685	75,687	307,169	176,423	57.4	230,186	193,321	36,863
March	221,114	84,326	372,880	222,074	59.6	235,555	204,259	31,296
April	213,956	82,190	311,133	191,545	61.6	241,751	213,308	28,443
May	197,543	74,670	310,264	167,978	54.1	250,944	223,262	27,682
June	190,896	*70,659	391,275	205,418	52.5	235,797	219,847	15,950
July	179,264	71,078	413,273	221,937	53.7	258,188	230,557	27,631
Total (7 mos.)	1,383,015	.....	2,416,615	1,356,138	56.1	.....	.....	.....
1933								
Jan.	149,743	80,925	232,576	118,870	51.1	139,761	119,382	20,379
Feb.	158,993	77,778	231,128	132,380	57.3	135,118	107,427	27,691
March	181,796	77,902	260,802	148,318	56.9	124,176	101,537	22,639
April	174,914	78,827	291,600	168,569	57.8	139,691	112,230	27,461
May	221,612	76,953	324,841	213,697	65.8	123,832	92,201	31,631
June	260,101	66,932	252,600	203,804	80.7	107,268	81,531	25,737
July	246,994	66,371	259,543	204,640	78.8	101,343	77,527	23,816
Total (7 mos.)	1,394,153	.....	1,853,090	1,190,278	64.2	.....	.....	.....

* Revised.

[1] As reported by 78 manufacturers that showed production of 199,711 tons of box board for January, 195,662 tons for February, 219,452 tons for March, 211,985 tons for April, 199,226 tons for May, 186,937 tons for June, and 179,683 tons for July, 1934.

[2] As reported by 76 manufacturers for months of 1934 and 70 for 1933.

Sutherland Co. Insures Employes

The Sutherland Paper Company, Kalamazoo, Mich., has arranged for group insurance for employes, totaling about $1,200,000 and covering about 90 per cent of present workers. The employees, regardless of age, will pay 60 cents a month as their portion of the premium, and the company will defray the remainder. Men workers have been given policies for $1,000, while women will receive $500 policies. The group insurance has been placed with the Aetna Life Insurance Company.

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New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, September 26, 1934.

Sentiment is more optimistic in the local paper market, following the settlement of the textile industry troubles. Demand for the various standard grades of paper is gradually improving and the closing months of the year should be very active. Prices are generally holding to formerly quoted levels.

The position of the newsprint paper market is practically unchanged. Production is being maintained in sufficient volume to take care of current requirements. Stocks at the mills are lower. According to information gathered by the News Print Service Bureau, stocks at United States and Canadian mills at the end of August totaled 81,960 tons, compared with 85,313 tons on July 31.

Demand for the various grades of fine paper is better than for some time past and the outlook for the near future is brighter. Prices remain unchanged. Tissues are going forward in normal volume for the season. The coarse paper market is exhibiting a firmer undertone. Box board output is expanding and prices are steady.

Mechanical Pulp

Steadiness prevails in the ground wood paper market. Demand for both domestic and imported mechanical pulp is fairly persistent. Manufacturing operations are generally keyed to consumption and the industry is in a sound statistical position. Prices are holding to schedule, in most instances.

Chemical Pulp

At a recent meeting of the Sulphite Pulp Producers Association of Europe, held in Copenhagen, it was decided to abrogate the European price agreements but to continue the agreement covering the curtailment of production. Subsequent cables from associations representing the producers in countries exporting to the United States have indicated very definitely that the breakdown of European price agreements will not affect the American market.

Old Rope and Bagging

The old rope market is only moderately active. Demand for both domestic and imported old manila rope is restricted. Small mixed rope is moving slowly. The bagging market is spotty. While gunny bagging is in good request, scrap bagging is listless. Roofing bagging is slightly stronger.

Rags

Some improvement was noticed in the domestic rag market. New cotton rags are arousing more interest than of late. Export demand for No. 1 white shirt cuttings is well maintained. The roofing rag situation is improving somewhat. The position of the imported rag market is practically unchanged.

Waste Paper

The higher grades of paper stock continue steady, especially hard and soft white shavings and hard white envelope cuttings. Book stock is also displaying steadiness. Board mill demand for the lower grades is light, but should improve with expansion of operations in the paper board industry. Prices are rather spotty.

Conditions in the local twine market are rather uncertain. Quotations on several grades are somewhat easier. With the busiest season, however, approaching, the future trend should be generally firmer. Already the demand is showing signs of expanding and the volume of inquiries around indicates livelier trading.

NRA CODE AND BUDGET NEWS

(Continued from page 22)

fication of the industry's approved code whereby payment of assessments for code support would be made mandatory upon members; and the Code Authority would be empowered to make expenditures called for under the budget.

Deputy Administrator David H. Tulley has announced that any objections relative to the budget, the suggested basis of contribution, the request for termination of the exemption under Order X-36, or the proposed code modification, must be submitted to his office, Room 209, National Savings and Trust Bldg., Washington, D. C., before Wednesday, Oct. 3, 1934.

NRA Approves Standard Order, Invoice or Acknowledgment Form, of Set Up Paper Box Manufacturing Industry

The National Recovery Administration has announced its approval of the Standard Order, Invoice or Acknowledgment Form drawn up by the Code Authority of the set-up paper box manufacturing industry, pursuant to provisions of Article VI of the industry's code.

The order form shall contain the following trade customs: "An overrun or underrun not exceeding 10 percent is to constitute and is to be accepted as fulfillment of any contract or order; "All contracts and orders are accepted contingent upon strike, fires and any other causes beyond seller's control; Where labels, wraps or other materials are furnished by buyer, an allowance is to be provided to cover spoilage in manufacture; "That the terms of discount shall not exceed 1 percent, 10 days, e. o. m.; provided, however, that this paragraph shall not apply to the manufacture and sale of jewelry boxes, cases and displays;" and "That the date of shipment shall coincide with the date of the invoice."

Open Paper Drinking Cup and Round Nesting Paper Food Container Industry Asks Termination of Exemption Conferred by Administrative Order X-36

Contending that the code cannot be administered without the financial support of industry members who are not primarily engaged in the manufacture of open paper drinking cups and round nesting paper food containers, the industry's Code Authority has petitioned the NRA for termination of the exemption conferred by Administrative Order X-36.

That Order relieves members of an industry from the necessity of contributing to the administration expense of a code other than the one which covers their business.

The Code Authority's application states that the industry is composed of a preponderance of small units, most of whose major lines of business are under another code.

Deputy Administrator David H. Tulley has announced that any objection to this application must be submitted to his office, prior to Oct. 2.

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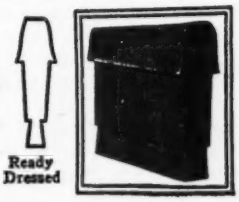

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Paper Trade Journal

15 West 47th Street **New York**

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, September 26, 1934.

BLANC FIXE.—Trading in the blanc fixe market is moderately active. Prices are holding to schedule. The pulp is quoted at from $42.50 to $45 per ton, in bulk, while the powder is selling at from 3½ cents to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER.—The bleaching powder market is showing signs of improvement. Shipments against contract are moving with regularity. Prices remain steady and unchanged. Bleaching powder is quoted at from $1.90 to $2.15 per 100 pounds, in drums, at works.

CASEIN.—The casein market is easier. Domestic standard ground is quoted at 11 cents and finely ground at 11½ cents per pound. Argentine standard ground is offered at 13 cents and standard ground at 13¼ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Steadiness prevails in the caustic soda market. Prices are holding to schedule. Solid caustic soda is quoted at from $2.60 to $3.10; while the flake and ground are selling at from $3 to $3.05 per 100 pounds, in large drums, at works.

CHINA CLAY.—The china clay market is fairly steady. Effective October 1 minimum prices on domestic paper-making clay will be established at from $6.50 to $12 per ton, at works. Imported china clay is quoted at from $13.50 to $21 per ton, ship side.

CHLORINE.—Conditions in the chlorine market are fairly satisfactory. The contract movement is normal. Prices remain unchanged. Chlorine is quoted at from $2 to $2.25 per 100 pounds, in tanks, or multi-unit cars, in ton lots, or over, at works.

ROSIN.—The rosin market is firmer. Paper making G gum rosin is quoted at $4.25 and FF wood rosin at $4.30 per 280 pounds, gross weight, in barrels, at southern points. Seventy per cent rosin size is selling at $2.50 per 100 pounds, in tank cars, at works.

SALT CAKE.—The salt cake market is unchanged. Prices are holding to schedule. Salt cake is quoted at from $12 to $14, and chrome salt cake at from $12 to $12.50 per ton, at works. Imported salt cake is selling at from $12 to $12.50 per ton, at works.

SODA ASH.—Demand for soda ash is fairly persistent. The contract movement is well up to average. Prices are steady and unchanged. Quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bulk, $1.10; in bags, $1.40; and in barrels, $1.50.

STARCH.—The starch market is exhibiting a fairly strong undertone. Prices are holding to formerly quoted levels, without difficulty. Special paper-making starch is quoted at $3.57 per 100 pounds, in bags; and at $3.84 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—Business in the sulphate of alumina market is improving slightly. Prices remain unchanged. Commercial grades are quoted at from $1.35 to $1.50; while iron free is selling at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—The sulphur market continues steady. Sulphur is quoted at $18 per long ton on orders of 1,000 tons, or over, on yearly contracts; and at $20 per ton on any smaller quantity over that period. On spot and nearby carloads, the quotation is $21 per ton.

TALC.—Although demand for talc is rather unrestricted at present, prices are generally holding to schedule. Domestic talc is quoted at from $16 to $18 per ton, in bulk, at eastern mines; while imported talc is selling at from $23 to $30 per ton, on dock.

Market Quotations

Paper

(F. o. b. Mill)			
Ledgers	6.50	@	—
Bonds	6.00	@	—
Index	6.00	@	—
Writings—			
Extra Superfine	6.50*	@	—
Superfine	6.25	@	—
Tub sized	5.75	@	—
Engine sized	5.50	@	—
Book, Cased—			
S. & S. C.	5.35	@	5.75
S. & S. C. Litho.	5.60	@	6.00
M. F.	5.10	@	5.50
Coated and Enamel	5.90	@	6.55
Coated Litho	5.90	@	6.55
Tissues—Per Ream—			
White No. 1	.82½	@	.85
White No. 2	.67½	@	—
Anti-Tarnish M. G. only	1.00	@	—
Colored	.85	@	—
Kraft	.70	@	—
Manila	.67½	@	.70
Manila—			
No. 1 Jute	9.00	@	9.25
No. 2 Jute	7.75	@	8.50
No. 1 Wood	4.00	@	5.25
No. 2 Wood	3.50	@	4.00
Butchers	4.00	@	4.50
Fibre Papers—			
No. 1 Fibre	4.25	@	5.50
No. 2 Fibre	4.00	@	4.75
Common Bogus	1.50	@	3.00
Screenings	2.50	@	3.50
Glassine—			
Bleached	.11	@	—
Unbleached	.09	@	—

(The following Quotations are Delivered New York)

News, per ton—			
Roll, contract	40.00	@	—
Rolls, spot	40.00	@	—
Sheets	45.00	@	—
Kraft—			
No. 1 Domestic	4.75	@	5.00
No. 2 Domestic	3.87½	@	—
Southern	3.87½	@	—
Boards—per ton—			
News	40.00	@	45.00
Chip	37.50	@	40.00
Sgl. Mla. Ll. Chip	47.50	@	52.50
Jute Lined Chip	47.50	@	52.00
White Patent Coated	60.00	@	65.00
Binders Boards	67.00	@	75.00

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—			
Moist	22.00	@	24.00
Dry	23.00	@	24.00
(F.o.b. Mill)			
No. 1 Domestic and Canadian	22.00	@	26.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—			
Division 1	2.85	@	—*
Division 2	2.80	@	—*
Division 3	2.75	@	—*
Prime Qualities—			
Class 1. All Prime Easy Bleaching	2.25	@	—*
Other Than Easy Bleaching—			
Class 2. Higher Than Standard	2.20	@	—*
Class 3. Standard	2.15	@	—*
Class 4. Lower than Standard	2.10	@	—
(On Dock, Atlantic Ports)			
Kraft No. 1	1.70	@	1.80
Kraft No. 2	1.55	@	1.65
(F.o.b. Pulp Mill)			
Kraft Domestic	1.70	@	2.25
(Delivered)			
Soda Bleached	2.50	@	—

*Add 60 Cents per short ton, dock charges, for Albany; $2.00 for Lake Ports East and $3.00 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags
(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	5.75	@	6.00
Silesias No. 1	3.75	@	4.00
New Unbleached	6.25	@	6.50
New Soft Blacks	3.00	@	3.25
Blue Overall	3.50	@	3.75
Fancy	2.50	@	2.75
Washables	1.75	@	2.00
Mixed Khaki Cuttings	3.00	@	3.25
O. D. Khaki Cuttings	3.75	@	4.00
Men's Corduroy	1.50	@	1.75
New Mixed Blacks	2.50	@	2.75

Old Rags

White, No. 1—			
Repacked	3.00	@	3.50
Miscellaneous	2.75	@	3.25
White, No. 2—			
Repacked	1.75	@	2.25
Miscellaneous	1.50	@	1.75
Thirds and Blues—			
Repacked	1.50	@	1.75
Miscellaneous	1.25	@	1.50
Black Stockings	2.50	@	3.00
Roofing Rags—			
No. 1	1.10	@	1.25
No. 2	.80	@	.85
No. 3	.70	@	.75
No. 4	.65	@	.70
No. 5A	.60	@	.65

Foreign Rags

New Rags

New Dark Cuttings	1.60	@	1.70
New Mixed Cuttings	1.75	@	1.85
New Light Silesias	3.75	@	4.00
Light Flannelettes	3.75	@	4.00
Unbleached Cuttings	6.50	@	6.75
New White Cuttings	6.50	@	6.75
New Light Oxfords	3.25	@	3.50
New Light Prints	2.75	@	3.00

Old Rags

No. 1 White Linens	7.50	@	8.00
No. 2 White Linens	6.50	@	7.00
No. 3 White Linens	4.50	@	5.00
No. 4 White Linens	2.25	@	2.50
No. 1 White Cotton	4.25	@	4.75
No. 2 White Cotton	3.25	@	3.75
No. 3 White Cotton	2.50	@	2.75
No. 4 White Cotton	1.90	@	2.15
Extra Light Prints	2.00	@	2.25
Ord. Light Prints	1.75	@	1.85
Med. Light Prints	1.55	@	1.65
Dutch Blue Cottons	1.75	@	1.85
French Blue Linens	2.30	@	2.40
German Blue Linens	2.15	@	2.25
German Blue Cottons	1.70	@	1.80
Checks and Blues	1.30	@	1.40
Linsey Garments	1.40	@	1.60
Dark Cottons	1.00	@	1.10
Old Shopperies	.95	@	1.00
New Shopperies	.90	@	1.00
French Blues	1.70	@	1.80

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—			
Foreign	1.50	@	1.60
Domestic	1.40	@	1.50
Wool Tares, light	1.20	@	1.30
Wool Tares, heavy	1.20	@	1.30
Bright Bagging	1.15	@	1.25
Manila Rope—			
Foreign	2.35	@	2.45
Domestic	2.25	@	2.50
Small Mixed Rope	1.10	@	1.35
New Burlap Cut	2.00	@	2.25
Hessian Jute Threads—			
Foreign	2.60	@	2.75
Domestic	2.80	@	3.00

Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	2.70	@	2.80
Ordinary Hard White No. 1	2.15	@	2.25
Hard White No. 2	1.95	@	2.05
Soft White No. 1	1.85	@	1.95
Flat Stock—			
Stitchless	.80	@	.90
Over issue Mag.	.80	@	.90
Solid Flat Book	.65	@	.75
Crumpled No. 1	.60	@	.65
Solid Book Ledger	1.50	@	1.65
Ledger Stock	1.00	@	1.10
New B. B. Chips	.30	@	.35
Manilas—			
New Env. Cut	1.70	@	1.80
New Cuttings	1.35	@	1.45
Print	Nominal		
Bogus Wrapper	.40	@	.50
Container	Nominal		
Old Kraft Machine—			
Compressed bales	1.10	@	1.20
News—			
No. 1 White News	1.15	@	1.25
Strictly Overissue	.65	@	.70
Strictly Folded	.42½	@	.50
No. 1 Mixed Paper	.32½	@	.40

Twines
(F. o. b. Mill)

Cotton—			
B. C. 18 basis	.30	@	.32
No. 1	.20	@	.22
No. 2	.19	@	.20
No. 3	.17	@	.18
A. Italian, 18 basis	.36	@	.37
Flaxseed Jute—			
Dark, 18 basis	.18	@	.20
Light, 18 basis	.20	@	.22
Jute Wrapping, 3-6 Ply—			
No. 1	.15½	@	.16½
No. 2	.15	@	.16
Tube Rope—			
4-ply and larger	.09¼	@	.09¾
Fine Tube Rope—			
4-ply	.11¼	@	.11¾
3-ply	.14¼	@	.14¾
2-ply	.14¼	@	.14¾
Paper Makers Twine	.08¼	@	.13¼
Box Twine, 2-3 ply	.14¼	@	.14¾
White Hemp	.13¼	@	.16¾
Java Sisal—			
No. 1 Basis	.11½	@	—
No. 2 Basis	.10½	@	—
New Zealand Sisal	.11½	@	—
Sisal Lath Yarn—			
No. 1	.13½	@	.15½
No. 2	.11½	@	.13½
Manila Twine	.24½	@	.29½

CHICAGO

Paper
(F. o. b. Mill)

Rag Bond	.12	@	.50
Water Marked Sulphite Bond	.06¼	@	.11
Sulphite Bond	.05½	@	.11
Superfine Writing	.18	@	.24
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¼	@	.06¼
No. 1 S.&S.C. Book	.06¼	@	.07¼
No. 2 S.&S.C. Book	.05¼	@	.06½
Coated Book	.07	@	.12
Coated Label	.07	@	.08½
No. 1 Manila	.04¼	@	.05¼
No. 1 Fibre	.04¼	@	.05¼
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.03¼	@	.03¾
No. 1 Kraft	4.75	@	5.00
Southern Kraft	3.88	@	4.25
No. 2 Kraft	3.88	@	4.25
Wood Tag Boards	.04¼	@	.05¼
Sulphite Screenings	.03	@	.03¼
Manila Tissue	.05¼	@	.07
White Tissue	.07	@	.09
(Delivered Central Territory)			
News, per ton—			
Rolls, contract	41.00	@	—
Sheets, open	46.00	@	51.00
Boards, per ton—			
Plain Chip	46.50	@	—
Solid News	50.00	@	—
Manila Lined Chip	55.00	@	—
Patent coated	65.00	@	—
Container Lined—			
85 Test, per 1000 sq. ft.			1.70
100 Test, per 1000 sq. ft.			1.85

Old Papers
(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope cuttings	1.70	@	2.00
No. 1 Hard White	1.40	@	1.65
No. 1 Soft White	1.25	@	1.50
Ledger & Writings	.70	@	.80
Solid Books	.60	@	.70
Blanks	1.00	@	1.05
Kraffts	.80	@	.90
New Kraft Cuts	1.20	@	1.30
Manila Env. Cuts	1.25	@	1.30
Ex. No. 1 Manila	.90	@	1.00
Print Manila	.50	@	.55
Overissue News	.60	@	.70
Old Newspapers—			
No. 1	.50	@	.55
Mixed Papers—			
No. 1	.30	@	.35
Roofing Stocks—			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper
(Delivered Philadelphia)

Bonds	.05-9/10	@	.38
Ledgers	.06 9/10	@	.40
Writings—			
Fine No. 3	.05	@	.06
Superfine	.10	@	.18
Extra Fine	.15	@	.24
Fine	.15	@	.26
Fine, No. 2	.10	@	.25
Book, M. F.	.05¼	@	.06¼
Book, S. S. & C.	.05	@	.07½
Book, Coated	.06½	@	.09
Coated Lithograph	.06¾	@	.08½
Label	.07	@	.11
No. 1 Jute Manila	6.25	@	—
Manila Sul., No. 1	5.25	@	—
Manila No. 2	3.00	@	—
No. 1 Kraft	5.00	@	—
Southern Kraft	4.75	@	—
Common Bogus	.03	@	.04½
News Print Rolls	46.00	@	55.00
Straw Board	40.00	@	45.00
News Board	50.00	@	—
Chip Board	45.00	@	—
Wood Pulp Board	70.00	@	85.00
Binder Boards—			
No. 1, per ton	75.00	@	80.00
No. 2, per ton	70.00	@	75.00
Carload lots	65.00	@	70.00
Tarred Felts—			
Regular	52.25	@	54.25
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.95	@	2.10
Best Tarred, 2-ply (per roll)	1.50	@	1.65
Best Tarred, 3-ply	2.00	@	2.25
Khaki Cuttings—			
No. 1 O.D.	.03	@	.04
No. 2 Mixed	.03	@	.04
Corduroy	.02	@	.03
New Canvas	.03½	@	.04½
New Black Mixed	.02½	@	.03½

Domestic Rags (Old)

White No. 1—			
Repacked	2.50	@	3.50
Miscellaneous	1.75	@	2.25
M. G.	3.00	@	3.75
Thirds and Blues—			
Miscellaneous	1.00	@	1.50
Repacked	1.50	@	2.00
Black Stockings (Export)	2.00	@	3.50
Roofing Stock—			
Foreign No. 1	.50	@	.75
Repacked	.70	@	.85

Bagging
(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.25	@	1.50
Domestic	1.50	@	1.75
Manila Rope	2.00	@	2.25
Sisal Rope	1.25	@	1.50
Mixed Rope	1.00	@	1.10
Scrap Burlaps—			
No. 1	1.25	@	1.30
No. 2	.80	@	1.00
Wool Tares, heavy	2.75	@	—
Mixed Strings	1.15	@	1.25
No. 1 New Light Burlap	2.25	@	2.50
New Burlap Cuttings	2.00	@	2.25

Old Papers
(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	2.25	@	2.30
No. 2 Hard White	1.90	@	2.00
No. 1 Soft White	1.80	@	1.85
No. 2 Soft White	1.25	@	1.30
No. 1 Mixed	—	@	.75
Solid Ledger Stock	1.50	@	1.60
Writing Paper	1.10	@	1.20
No. 1 Books, heavy	.65	@	.70
No. 1 New Manila	1.35	@	1.40
Print Manila	.50	@	.60
Container Manila	.45	@	.50
Old Kraft	1.15	@	1.20
No. 1 Mixed Paper	.32½	@	—
Straw Board Chip	.30	@	—
Binders Board Chip	.30	@	—
Corrugated Board	.50	@	—
Overisaue News	.60	@	—
Old Newspapers	.42½	@	—

Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	03½	@	.04
New White, No. 2	.02½	@	.04
Light Silesias	.02½	@	.03
Silesias, No. 1	.03	@	.03½
Black Silesias, soft	.02½	@	.03
New Unbleached	.05	@	.05½
Washable, No. 1	.01½	@	.02
Blue Overall	.03½	@	.04
Cottons—According to grades—			
Washable, No. 2	.02½	@	.03
New Blue	.01½	@	.03
Fancy	.01½	@	.03
New Black Soft	.02	@	.04
New Light Seconds	.01½	@	.02
New Dark Seconds	1.50	@	1.75

BOSTON

Paper
(F o. b. Mill)

Ledgers—			
Sulphite	.06	@	.12½
Rag Content	.12	@	.30
All Rag	.36	@	.52½
Bonds—			
Sulphite	.07¼	@	.11
Rag Content	.12	@	.40
All Rag	.36	@	.65
Writings	.06½	@	.20
Superfines	.11	@	.31
Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	.18
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¼	@	.06½
Manila, Sul. No. 2	.03¼	@	.04½
No. 1 Kraft	.04¼	@	.05
No. 2 Kraft	.03½	@	.04¼
(F. o. b. Boston)			
Southern Kraft	.03½	@	.04½
(F. o. b. destination in carload lots, f. o. b. mill in less than carload lots.)			
Common Bogus	.02	@	.02¼
(Delivered New England points)			
News Print, rolls	44.50	@	—
Straw Board, rolls	.009	@	35.00
Straw Board in Sheets, basis 35s to 70s	—	@	40.00
Filled News Board	40.00	@	45.00
Chip Board	37.50	@	40.00
Chip Board (Creasing)	37.50	@	40.00
Single Manila Lined Chip	47.50	@	52.50
Single White, Patent Coated News Board (Bender)	57.50	@	65.00
Wood Pulp Board	70.00	@	75.00
Binder Boards (Standard Grade)	67.00	@	75.00

Old Papers
(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.20	@	2.35
No. 1 Soft White	1.75	@	2.00
No. 2 Mixed	.80	@	.85
Solid Ledger Books	1.75	@	—
Overissue Ledger Stock	1.15	@	1.30
Mixed Ledgers	.95	@	1.05
No. 1 Books, heavy	.85	@	.90
No. 1 Books, light	.65	@	.75
Crumpled Stitchless Book Stock	.50	@	.60
Manila Env. Cuttings	1.25	@	1.30
No. 1 Old Manila	.65	@	.70
White Blank News	1.10	@	1.15
No. 1 Kraft	1.05	@	1.10
Manila	.55	@	.60
No. 1 Mixed Papers	.35	@	—
Print Manila	.45	@	.50
Overissue News	.50	@	.55
Old Newspapers	.42½	@	.47½
Box Board Chips	.32½	@	.35
Corrugated Boxes	.32½	@	.40
Screening Wrappers	.50	@	.60

Bagging
(F. o. b. Boston)

Manila Rope—			
Foreign	—	@	1.75
Domestic	1.90	@	2.00
Transmission Rope	.90	@	1.00
Mixed Strings	.40	@	—
Jute Rope	1.35	@	1.40
Jute Carpet Threads	.65	@	.70
Gunny No. 1—			
Foreign	1.50	@	1.60
Domestic	1.25	@	—
Bleachery Burlap	4.00	@	4.50
Scrap Burlap	1.05	@	1.10
Scrap Sisal	1.10	@	1.20
Scrap Sisal for shredding	1.00	@	1.25
Wool Tares, heavy	1.25	@	1.30
New Burlap Cuttings	1.45	@	1.50
Australian Wool Pouches	2.00	@	2.25
Heavy Baling Bagging	1.40	@	1.50
Paper Mill Bagging	.90	@	1.10
Bagging No. 2	.50	@	.55

Domestic Rags (New)
(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.01¾	@	.02
New White No. 1.	.05½	@	.06
New White No. 2.	.03½	@	.04
Silesias No. 1	.04	@	—
New Black Silesias	.02½	@	.03
New Unbleached	.05½	@	.06
Blue Cheviot	—	@	4.65
Fancy	—	@	.02¼
Washable	.02¾	@	—
Cottons—According to grades—			
Blue Overalls	—	@	.03¼
New Black, soft	.04	@	.04¼
Khaki Cuttings	.03	@	.03¼
O. D. Khaki	.02¾	@	.03
Corduroy	.01¾	@	.02
New Canvas	—	@	05
B.V.D. Cuttings	—	@	.06¼

Domestic Rags (Old)
(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	—	@	3.00
Miscellaneous	2.50	@	2.75
White No. 2—			
Repacked	2.00	@	2.75
Miscellaneous	2.00	@	2.25
Twos and Blues	1.25	@	1.50
Thirds and Blues			
Repacked	2.00	@	2.75
Miscellaneous	2.00	@	2.25
Black Stockings	2.25	@	2.50
Roofing Stock			
No. 1	.70	@	.75
No. 2	.65	@	.70
No. 3	.55	@	.60

Foreign Rags
(F. o. b. Boston)

Dark Cottons	.85	@	.95
New White Shirt Cuttings	5.50	@	6.00
Dutch Blues	2.00	@	2.50
New Checks & Blues	2.50	@	3.00
Old Fustians	1.55	@	1.60
Old Linsey Garments	1.25	@	1.35

TORONTO

Paper
(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.10¼	@	—
No. 2 Sulphite	.08½	@	—
No. 1 Colored	.10¼	@	—
No. 2 Colored	.09	@	.10
Ledgers (sulphite)			
Ledgers, No. 1	.34½	@	—
Ledgers, No. 2	.25½	@	—
Writing	.09	@	.09½
Book—			
No. 1 M. F. (Carloads)	6.20	@	—
No. 3 M. F. (Carloads)	5.70	@	—
No. 4 M. F. (carloads)	4.75	@	—
No. 1 S. C. (carloads)	6.65	@	—
No. C. (carloads)	6.20	@	—
No. C. (carloads)	5.20	@	—
No. 1 Coated and Litho	12.00	@	—
No. 2 Coated and Litho	10.50	@	—
No. 3 Coated and Litho	9.50	@	—
Coated tinted	14.00	@	—
Wrapping—			
Rag Brown	4.25	@	—
White Wrap	2.22½	@	—
"B" Manila	4.75	@	—
No. 1 Manila	5.25	@	—
Fiber	5.25	@	—
Kraft, M. F.	5.75	@	—
Kraft No. 2	5.25	@	—

(F.O.B. Cars Toronto)

News, per ton—			
Rolls (contract)	39.50	@	—
Sheets	44.50	@	—

Pulp
(F. o. b. Mill)

Ground Wood	18.00	@	40.00
Sulphite easy bleaching	40.00	@	—
Sulphite, news grade	38.00	@	—
Sulphite, bleached	50.00	@	55.00
Sulphate	50.00	@	—

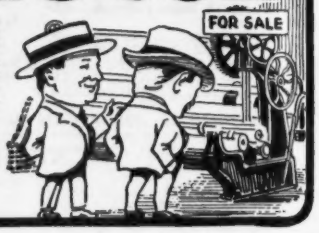
Old Waste Paper
(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	2.00	@	2.30
Soft White	1.80	@	1.90
White Blk. News	1.25	@	1.40
Book and Ledger—			
Flat Magazine and Book Stock (old)	.90	@	1.00
Light and Crumpled Book Stock	.80	@	.90
Ledgers and Writings	1.00	@	1.05
Manilas—			
New Manila Cut	1.25	@	1.50
Printed Manilas	.70	@	.60
Kraft	1.25	@	1.50
News and Scrap—			
Strictly Overissue	.80	@	—
Strictly Folded	.60	@	—
No. 1 Mixed Paper	.50	@	—

Domestic Rags
(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.06	@	.06¼
Fancy Shirt Cuttings	.02¼	@	.02½

The CLEARING HOUSE of THE PAPER TRADE



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SALARIED POSITIONS. $2,500 to $25,000. This thoroughly organized advertising service of 24 years' recognized standing and reputation carries on preliminary negotiations for positions of the calibre indicated, through a procedure individualized to each client's personal requirements. Several weeks are required to negotiate and each individual must finance the moderate cost of his own campaign. Retaining fee protected by a refund provision as stipulated in our agreement. Identity is covered and, if employed, present position protected. If you have actually earned over $2,500, send only name and address for details. R. W. Bixby, Inc., 117 Delward Bldg., Buffalo, N. Y.

EXPERIENCED ADJUSTER on Glassine and Specialty Bags. Good opportunity for the right man in New York City. Address Box 34-429, care Paper Trade Journal. TF

WANTED—Technically trained man with little mill experience. Address Box 34-430, care Paper Trade Journal. S-27

SITUATIONS WANTED

CYLINDER MACHINE TENDER wants position. 20 years' experience on Combination-board. Specialties and Container-liner. Can furnish first class references. Address Box 34-390, care Paper Trade Journal. S-27

BOARD MILL SUPERINTENDENT—A-1 manufacturer of high grade box boards, white patent coated, butter cartons, wall board, and specialties. Expert colorman, beater room specialist. Perfect maintainence at low costs. Highest references guaranteed. Address Box 34-398, care Paper Trade Journal. O-11

FINISHING ROOM FOREMAN and shipping clerk experienced on all grades of box board and specialties, cutters, rewinders and pasting machines. Reliable references. Address Box 34-417, care Paper Trade Journal. O-4

CHEMICAL ENGINEER—Four years successful laboratory research experience along paper, pulp and allied lines. Solved a number of important problems. Four years' experience as Plant Chemist including Glassine, Greaseproof and Waxing Papers. Further details gladly furnished upon request. Address Box 34-428, care Paper Trade Journal. S-27

RECENT PULP and Paper Graduate—With laboratory and finishing room experience and semi-commercial work in all phases pulp, paper manufacture, desirous of connection wherein ability may be utilized. Address Box 34-416, care Paper Trade Journal. S-27

PRACTICAL Kraft Mill Superintendent. Twenty-two years' experience on Bag Wrappers and Specialties. A-1 on Maintenance and can get efficiency and results. Address Box 34-415, care Paper Trade Journal. O-4

YOUNG MAN, 34 years of age, now employed, competent Paper Mill Accountant, desires connection with mill in the South or Middle Atlantic States. Experienced executive and familiar with budgetary control. Address Box 34-439, care Paper Trade Journal. O-11

SITUATIONS WANTED

BOARD MILL SUPERINTENDENT — 45 years old. Married. 25 years experience all grades folding box and specialties. Production quality and mill maintenance guaranteed. Address Box 34-283, care Paper Trade Journal. S-27

PLANT ENGINEER with wide experience in design, construction, maintenance and operation of pulp and paper mill desires new position. Address Box 34-400 care Paper Trade Journal. O-4

WANTED—Position as MANAGER or SUPERINTENDENT of mill making binders, leather and other boards. Middle aged man. Good at construction and repairs. Address A. Martin, 100 Lancaster Ave., Downingtown, Pa. S-27

RECENT COLLEGE GRADUATE in pulp and paper engineering desires employment with paper converting establishment. Salary secondary consideration to future possibilities. Best references. Address Box 34-401, care Paper Trade Journal. S-27

POSITION WANTED—SUPERINTENDENT OR FOREMAN; chip board or wrapping mill. Experienced at construction or remodeling. Eastern States preferred. Address A. Martin, 100 Lancaster Ave., Downingtown, Pa. S-27

WANTED—Position as Superintendent or assistant superintendent of paper bag plant. Good production man and expert paste maker. Best of references. Address Box 34-440, care Paper Trade Journal. S-27

WANTED

WANTED—Rotary Knotter or Tailing Screen. Good condition. Immediate delivery. Address Box 34-433, care Paper Trade Journal. S-27

WANTED—2—Bird Screens; Calender Rolls, approximately 12 x 117"; Oliver save-all; Pony Jordan; Parry Liner. Address Box 34-409, care Paper Trade Journal. O-4

WANTED—Used equipment for pulp testing: fold testing machine, ½ pound laboratory beater, laboratory pebble mill. Address Box 34-434, care Paper Trade Journal. S-27

WANTED—PAPER CUTTER—Not less than 146" Knife with or without Layboy. Address Box 34-435, care Paper Trade Journal. O-4

WANTED—1—Kamyr Wet Machine. Address Box 34-431, care Paper Trade Journal. O-4

Address Replies

to advertisements appearing under Box Numbers in care of

PAPER TRADE JOURNAL

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New York, N. Y.

MISCELLANEOUS

CLARK MANUFACTURING COMPANY, Holyoke, Mass. Telephone 2-4370. Builders of cylinder moulds, couch and felt rolls, dandy rolls. We cover dandies and cylinders tight for fast running machines. tf.

GOVERNMENT BID

GOVERNMENT BID

SEALED proposals will be received from manufacturers of bank note or other fine papers until 12 o'clock noon, Monday, October 8, 1934, and then opened for furnishing to the Department of Labor during a period of six months, certificates of citizenship paper of the highest quality containing the distinctive features of the paper now used by the department. Full information upon this subject will be given upon application to the Chief of the Division of Publications and Supplies of the Department, at whose offices samples of the paper required, showing special design watermark and copy for same, may be examined. Proposals are to be made by letter, no blank for this purpose being furnished, addressed to the Division of Publications and Supplies, Department of Labor, Washington, D. C., and the envelope in which they are enclosed marked in the lower left-hand corner, "Proposals for distinctive safety paper." The department reserves the right to reject any or all bids. S-27

FOR SALE

PAPER COATING MACHINERY—Waxing, Oiling, Gumming, Gluing, Asphalt Duplexing Laboratory Coating and Treating machines. High speed. New improvement. MAYER COATING MACHINES COMPANY, INC., Rochester, N. Y. T.F.

CORRUGATED PAPER FRUIT & VEGETABLE BASKETS, HAMPERS, ALSO WASTE BASKETS, (patented). All sizes. Tested strength. Ask for sketch. Royalty on basis. Address Box 34-363, care Paper Trade Journal. S-27

PATENT FOR SALE—An experimental machine, small in size, will press a pulp box in one operation, 5¼ x 8½ x 10". Coming method of box making. Address Chas. H. Wood, 420 17th, Oakland, Cal. O-4

FOR SALE—1—Two Cylinder Impco multistage washer, used only short time. Molds 42 x 110". Address Box 34-422, care Paper Trade Journal. O-4

FOR SALE—1—Noble and Wood pony Monarch Jordan, direct connected to 3 phase, 60 cycle, 440 volt motor. Address Box 34-432, care Paper Trade Journal. O-4

FOR SALE

Fourdrinier Paper Machines with wires 107"—97"—90"—88". New Cylinder Paper Machines 90" wide. Hamblet & Moore & White Cutters 36" to 90" wide.

FRANK H. DAVIS COMPANY

175 Richdale Ave. Cambridge, Mass.
TF

FOR SALE

FOR SALE—1—Mill with single fourdrinier machine, trim 80". Concrete and brick buildings. Well located. Address Box 34-406, care Paper Trade Journal. O-4

FOR SALE—Complete mill with two fourdrinier machines, trim over 100". Address Box 34-407, care Paper Trade Journal. S-27

FOR SALE—65" Sheridan "New Model" Paper Cutter latest type machine. A-1 condition. Address Box 34-115, care Paper Trade Journal. S-27

FOR SALE—One 36" x 144" Norton Roll Grinders, complete and in A-1 condition. Address Box 34-438, care Paper Trade Journal. S-27

FOR SALE

FOR SALE CHEAP—One used No. 400C Columbus Automatic Stoker. Will feed a 70 to 100 horsepower boiler. In need of repairs. Replaced by larger stoker. Address Box 34-404, care Paper Trade Journal. O-4

FOR SALE—36 Cameron Slitter. Refrigerating unit and Waxing Machine. Address Box 34-437, care Paper Trade Journal. O-11

FOR SALE or TO LEASE under royalty agreement, process for manufacture of formed paper articles cover by United States Patent No. 1904268 and other patents pending for treating formed paper articles. Address P. O. Box 113, Plattsburgh, N. Y. S-27

FOR SALE

FOR SALE—4—Bird Screens; 1—112" fourdrinier machine; 75—Dryers 36 x 84, almost new. Address Box 34-408, care Paper Trade Journal. O-4

FOR SALE—2—Fourdrinier Machines, complete; 1—Hamblet Cutter; 1—Seybold Ream cutter; 1—75" super-calender stack; 1—Beloit English type reel, 132". Address Box 34-410, care Paper Trade Journal. S-27

FOR SALE—1—607 H.P. Stirling boiler with Taylor stokers, Diamond soot blower and superheater, 160 lb. pressure. Address Box 34-436, care Paper Trade Journal. O-11

De Laval Steam Turbine Company
Trenton, N. J.
Steam Turbines—Catalog D . . Centrifugal Pumps—Catalog B
Centrifugal Blowers and Compressors—Catalog F
Helical Gears—Catalog R . . . Worm Reduction Gears—Catalog R
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NEW YORK CITY
ASBESTINE FILLER
Reg. U. S. Patent Office 90% Retention

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MADE SPECIALLY FOR PAPER and PULP MILL USE
Copper, bronze, steel or other metals. Heat-treated.
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Make Good Paper
Appleton Woolen Mills, Appleton, Wisconsin

Appleton Wires
are good wires
APPLETON WIRE WORKS INC APPLETON WIS.

PULP MILL MACH'Y FINISHING ROOM MACH'Y
— FRICTION CLUTCHES —
The MOORE & WHITE CO.
PHILADELPHIA, PA.
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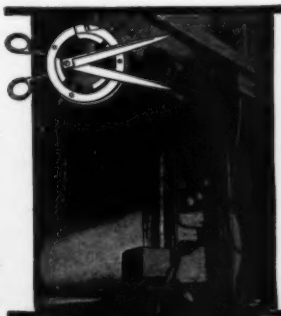
PAPER MILL MACHINERY

Your Card in This Space
Will Bring Results

Perforated Metal Screens
For Pulp and Paper Mills
STEEL, COPPER, BRASS, BRONZE, MONEL METAL and other Alloys
punched for Centrifugal and Rotary Screens, Pulp Washers, Drainer Bottoms, Filter Plates, etc.
".065" Round
CHARLES MUNDT & SONS
63-65 FAIRMONT AVE. JERSEY CITY, N. J.


BETTER your product—lower your manufacturing costs—with Langston Slitters and Rewinders. Every roll square-edged, tightly wound, dust-free. Types for every need. Ask for catalog.
Samuel M. Langston Co., Camden, N. J.
LANGSTON SLITTERS

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Carborundum Co.
The Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc.
Norton Co.

ACIDS (Sulphuric)
American Cyanamid & Chem. Corp.
Pennsylvania Salt Co.

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Paper Manufacturers Co., Inc.

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Potdevin Machine Co.
John Waldron Corp.

AGITATORS
Carthage Machine Co.
Dilts Machine Works, Inc.
Downingtown Mfg. Co.
Hauser Stander Tank Co.
Moore & White Co.
Valley Iron Works Co.

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Ross Engrg. Corp., J. O.
Thwing Instrument Co.

AIR DRYING MACHINERY
Waldron, John, Corp.

AIR PREHEATING UNITS
Ross Engineering Corp., J. O.

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Chromium Corporation of America
Electro-Alloys Co., The
Illinois Steel Co.
International Nickel Co.
Kropp Forge Co.
Pusey and Jones Corp.

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Paper Makers Chemical Corp.
Pennsylvania Salt Mfg. Co.

AMMONIA
American Cyanamid & Chem. Corp.
Mathieson Alkali Works, Inc.
Pennsylvania Salt Co.

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Hardy, George F.

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AUTOMATIC WATER FEEDER
Merritt Engineering & Sales Corp., The

BACKING WIRES
Appleton Wire Works
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S. K. F. Industries
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Timken Roller Bearing Co.

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The Appleton Machine Co.
Dilts Machine Works, Inc.
Emerson Manufacturing Co.
Jones & Sons Co., E. D.
Shartle Bros. Mch. Co.
Valley Iron Works Co.

BEATER BED PLATES
Bolton & Sons, Inc., John W.
Dayton Globe Iron Works
Dilts Machine Works, Inc.
E. D Jones & Sons Co.
Taylor, Stiles & Co.
Valley Iron Works Co.

BEATER CONTROLS
Thwing Instrument Co.

BEATER ENGINE BARS
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Dayton Globe Iron Works
Dilts Machine Works, Inc.
E. D. Jones & Sons Co.
Taylor Stiles & Co.
Valley Iron Works Co.

BEATER HOODS
Dilts Machine Works, Inc.
E. D. Jones & Sons Co.

BEATER ROLLS
Dayton Globe Iron Works
Dilts Machine Works, Inc.
Emerson Manufacturing Co.
E. D. Jones & Sons Co.

BEATER STOCK RECORDER
Bristol Co., The
Merritt Engineering & Sales Corp., The

BELTING
Goodrich Rubber Co.
Goodyear Tire & Rubber Co.
Manhattan Rubber Mfg. Div. of Raybestos-Manhattan Inc.
Rhoads Sons, J. E.
U. S. Rubber Co.

BELT LACING
Flexible Steel Lacing Co.

BLEACH EJECTORS
Perkins & Sons, Inc., B. F.

BLEACHING APPARATUS
E. D. Jones & Sons Co.
Moore & White Co.

BLEACHING POWDER
Mathieson Alkali Works, Inc.
Pennsylvania Salt Co.

BLEACHING PROCESS
Electro Bleaching Gas Co.
Pennsylvania Salt Mfg. Co.

BLOW PIPING
Moore & White Co.

BLOW PITS
Hauser Stander Tank Co.
Kalamazoo Tank & Silo Co.

BLOWERS (CENTRIFUGAL)
De Laval Steam Turbine Co.
General Electric Co.
Ross Engineering Corp., J. O.
Sturtevant Co., B. F.

BOILER PRESERVATIVES
Magnus Chemical Co.

BOTTOMS (Steel & Wood)
Hauser Stander Tank Co.
Kalamazoo Tank & Silo Co.

BRASS COLLAPSIBLE SHAFTS
Moore & White Co., The

BREAKER BEATER WATER FEEDER
Merritt Engineering & Sales Corp., The

BUCKETS (elevating)
Chain Belt Co.
Hendrick Mfg. Co.
Link-Belt Co.

BULKERS (Pressure)
B. F. Perkins & Son, Inc.

BUNDLING PRESSES
Paper Converting Machine Co., Inc.
Potdevin Machine Co.

BURSTING TESTERS
E. J. Cady & Co.
B. F. Perkins & Son Co.
Testing Machines, Inc.

CALCIUM HYPOCHLORITE
Mathieson Alkali Works, Inc
Pennsylvania Salt Mfg. Co.

CALENDERS
Beloit Iron Works
Farrel-Birmingham Co.
Lobdell Car Wheel Co.
Moore & White Co.
Norwood Engrg. Co.
Perkins & Son, Inc., B. F.
Smith & Winchester Mfg. Co.
Textile Finishing Mchy. Co.

CALENDER DOCTORS
Dillon Machine Co.
Ticonderoga Machine Works

CALENDER ROLL GRINDERS
Farrel-Birmingham Co.
Lobdell Car Wheel Co.
Smith & Winchester Mfg. Co.
Ticonderoga Machine Works

CALENDER ROLLS
Farrel-Birmingham Co.
Lobdell Car Wheel Co.
Perkins & Son, Inc., B. F.
Smith & Winchester Mfg. Co.
Textile Finishing Mchy. Co.
Waldron, Corp., John

CALIPERS (Micrometer Roll)
Farrell-Birmingham Co.
Lobdell Car Wheel Co.

CAMERAS (Photomicrographic)
Bausch & Lamb Optical Co.

CARBON BISULPHIDE
Pennsylvania Salt Co.

CASEIN
American Cyanamid & Chemical Corp.
The Casein Manufacturing Co. of America
Paper Makers Chemical Corp.

CASTINGS
Carthage Machine Co.
Chain Belt Co.
International Nickel Co.
Farrel-Birmingham Co.
Frederick Iron and Steel Co.
Lobdell Car Wheel Co.
Montague Machine Co.
Smith & Winchester Mfg. Co.
Pusey and Jones Corp.

CASTINGS (Brass, Bronze, Iron)
Smith & Winchester Mfg. Co.

CASTING (Chrome Nickel Alloy)
Lobdell Car Wheel Co.

CASTINGS (Iron)
Chain Belt Co.
Hamblet Machine Co.
Link-Belt Co.

CAUSTIC SODA
American Cyanamid & Chemical Corp.
Mathieson Alkali Works, Inc.
Paper Makers Chemical Corp.
Pennsylvania Salt Mfg. Co.

CELLULOSE BAG MACHINERY
Potdevin Machine Co

CENTRIFUGAL MACHINERY (Special)
De Laval Steam Turbine Co.

CHAIN DRIVES
Chain Belt Co.
Link-Belt Co.

CHEMICALS
American Cyanamid & Chemical Corp.
Campbell & Co., John
E. I. DuPont de Nemours & Co., Inc.
Electro Bleaching Gas Co.
General Chemical Co.
General Dyestuff Corp
Geigy Co., Inc.
New York Color & Chemical Co., Inc.
Paper Makers Chemical Corp.
Williams & Co., C. K.

CHIPPERS
Carthage Machine Co.
Valley Iron Works Co.

CHLORINE
Electro Bleaching Gas Co
Mathieson Alkali Works, Inc.
Pennsylvania Salt Co.

CHROME PLATE
Chromium Corporation of America

CHUCKS
John Waldron Corp.

CLAY
American Cyanamid & Chemical Corp.
Ashcraft Wilkinson Co.
English China Clays Sales Corporation
Paper Makers Importing Co.
Vanderbilt Co., R. T.

CLEANING MATERIALS
Magnus Chemical Co.

CLUTCHES
Chain Belt Co.
Link-Belt Co.
Moore & White Co.
Pusey and Jones Corp.

CLUTCH PULLEYS
Moore & White Co.

COATING MACHINERY
Moore & White Co.
Potdevin Machine Co.
Waldron Corporation, John

COATING MATERIALS
National Oil Products Co.
Paper Makers Chemical Corp.

COCKS, Lubricated
Crane Company

COGS
Bowsher, N. P., The
Dayton Globe Iron Works

COLLAPSIBLE WINDER SHAFTS
Moore & White Co.

COLORIMETERS
Bausch & Lomb Optical Co.

COLOR ANALYZERS
Thwing Instrument Co.

COLOR MIXING EQUIPMENT
Waldron, John, Corp.

COMBINING MACHINES
Waldron Corp., John

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Allis-Chalmers Mfg. Co.
General Electric Co.

COMPRESSORS (Centrifugal)
De Laval Steam Turbine Co.

CONSISTENCY REGULATOR
Merritt Engineering & Sales Corp., The
Trimbey Machine Works

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CONTINUOUS BEATERS
E. D. Jones & Sons Co.
Valley Iron Works Co.

CONTINUOUS BEATER WATER FEEDER
Merritt Engineering & Sales Corp., The
Trimbey Machine Works.

CONTROLLING INSTRUMENTS
Bristol Co., The
Merritt Engineering & Sales Corp., The
Testing Machines, Inc.
Thwing Instrument Co.

CONTROLS (Electric)
Thwing Instrument Co.

CONVEYOR CHAINS
Chain Belt Co.
Link-Belt Co.

CONVEYORS (Trim)
Link-Belt Co.
Ross Engineering Corp., J. O

COOKING & RECOVERY PROCESS
Chemipulp Process, Inc.
Ross Engineering Corp., J. O

CORES (Paper)
Climax Tube Co.
Elixman Paper Co.

CORES (Steel)
Smith & Winchester Mfg. Co.

COTTON CALENDER ROLLER
Perkins & Son, Inc., B. F.
Textile Finishing Mchy. Co.

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American Wringer Co.
Beloit Iron Works
Goodrich Rubber Co., B. F.
Montague Machine Co.
Moore & White Co., The
The Manhattan Rubber Mfg Division of Raybestos-Manhattan, Inc.
Pusey and Jones Corp.

COUPLINGS
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De Laval Steam Turbine Co.
Frederick Iron and Steel Co.
Waldron Corp., John
Walworth Co.
Westinghouse Electric & Mfg. Co.

CREPING MACHINES
Beloit Iron Works
Paper Converting Machine Co., Inc.
John Waldron Corp.

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Moore & White Co.

CYLINDER DRIVES
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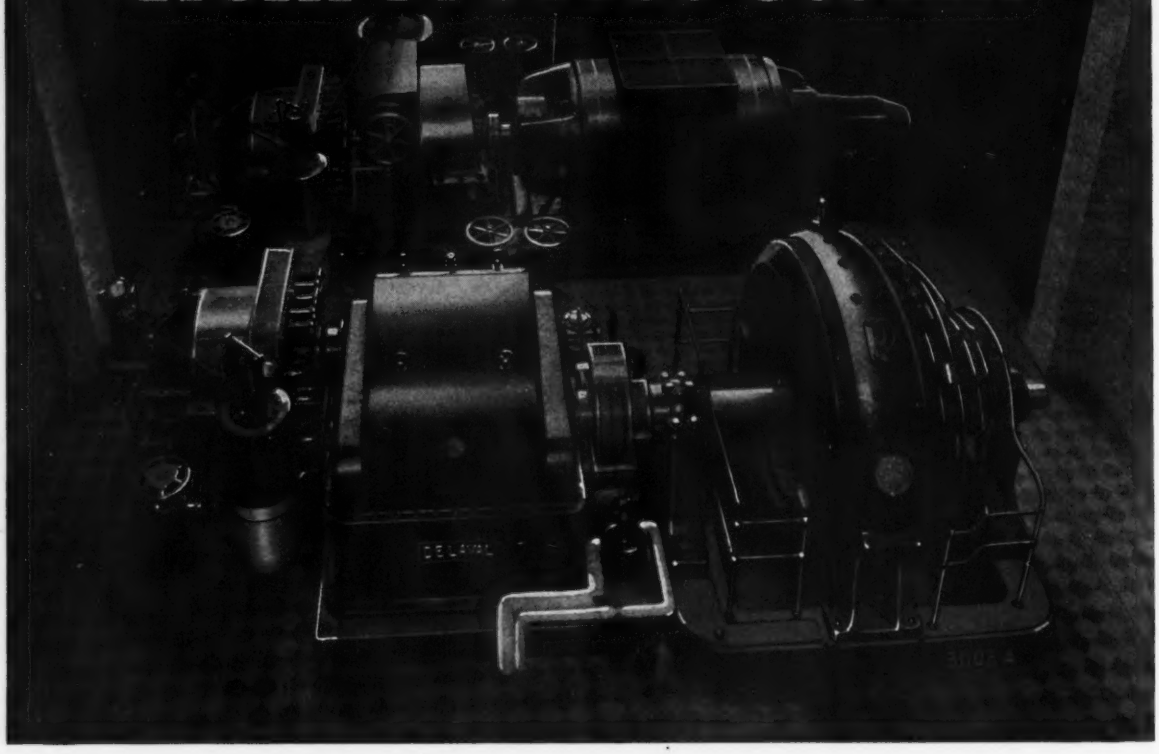
EXTRACT MONEY from Process Steam



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The geared turbine driven D. C. generator in the foreground produces 2400 kw. from steam exhausted at pressures varying from 10 ins. vacuum to 5 lb. gage, according to the heat balance of the station.

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